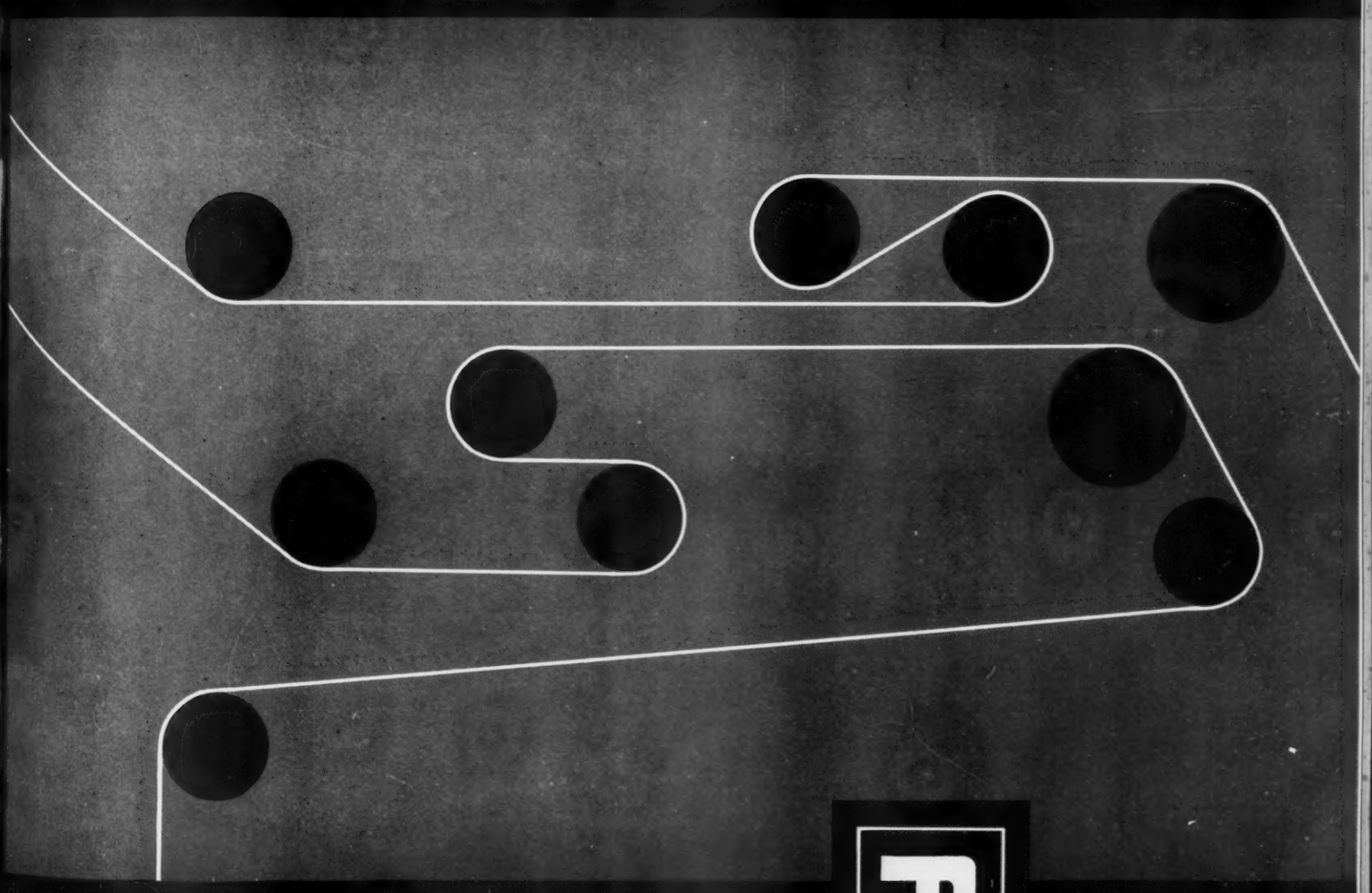
PRINTING EQUIPMENT



...You'll be off on the right foot with a HARRIS 17x22

YOU CAN'T MAKE A BETTER START in the ... ness than with a Harris Offset Press.

Harris presses are built to help the owner who ... a combination shop, or a straight offset shop, to get ... on the right foot. Features such as the single-point pres... control, simple adjustment for stock thickness, quick-... acting plate clamps, automatic, four-way protection, pos... tive controls, mean simpler, easier press operation. *Stream feed* insures finer register, makes possible faster speeds. *More rollers* mean greater ink break-up, smoother inking. All these are features that make possible more impressions . . . better impressions . . . greater profits.

So when you go offset . . . as you probably will some day soon . . . get started right . . . Go Harris . . . get *a better run for your money.*

HARRIS-SEYBOLD

General Offices—Cleveland 5, Ohio

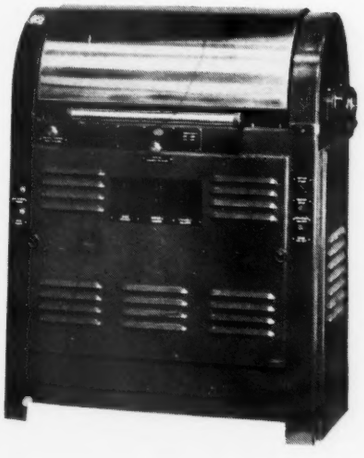
Even "Joe" is Happy . . .

A few days after installing a new Sta-Hi Master Former recently, the managing editor of a typical smaller city daily wrote us:

> "When Joe Doakes, the average newspaper reader, notices a marked improvement in the quality of printing in his home town paper, there must be a reason.
>
> "Joe did notice the improvement in our paper *the first day* we used our new Sta-Hi Master Former. We did not realize the Sta-Hi would make so much difference.
>
> "Even our severest critic, the president and general manager, mentioned the big improvement, without being asked. Everybody is happy about it."

You'll find this same spontaneous reaction when *you* install a Master Former in *your* stereotype department . . . Let us give you complete details . . . It pays to please Joe Doakes!

STA-HI



STA-HI CORPORATION • 1020 CROCKER ST. • LOS ANGELES 21

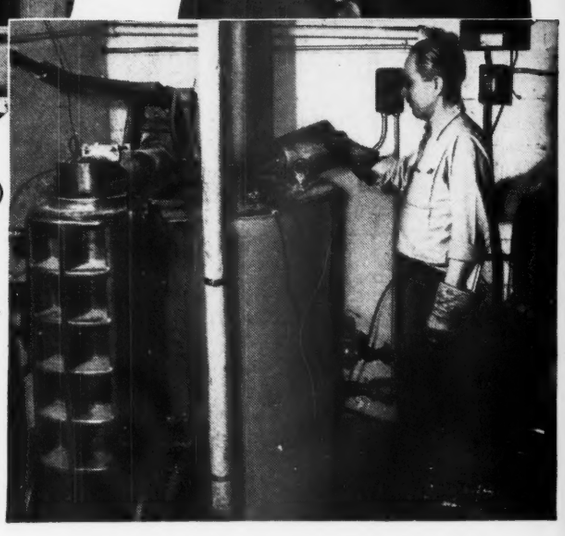
SPEED and CLEANLINESS of GAS

Demonstrated in Stereotype and Linotype Departments of

MODERN NEWSPAPER PRINTING PLANT

①

②



③

1. *Modern plant of the Bedford Daily Times-Mail.*
2. *Stewart Riley, President and Publisher.*
3. *H. P. McChord, Mechanical Superintendent, charging the Gas-fired stereo pot.*

FRONT-PAGE example of the importance of GAS in the graphic arts is its use in the efficient modern plant of the Bedford Daily Times-Mail, Bedford, Indiana. This is a small newspaper printing establishment but it was built to do a streamlined publishing job. In selecting the production equipment the publishers chose Gas-fired stereotype and linotype units.

The varying hourly demands on graphic arts equipment in a newspaper plant never overload the Gas-fired units. As Mechanical Superintendent H. P. McChord expressed it—*"Our equipment is always ready—by the time we get the pages ready to pour, our metal is at the proper temperature."*

That's the record of GAS in graphic arts processing—always ready when needed, always flexible, clean, rapid-heating, and automatically controllable at any desired temperature.

The experience of the publishers of the Bedford Daily Times-Mail is a typical example of the efficiency of Modern Gas Equipment—it's worth investigating.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

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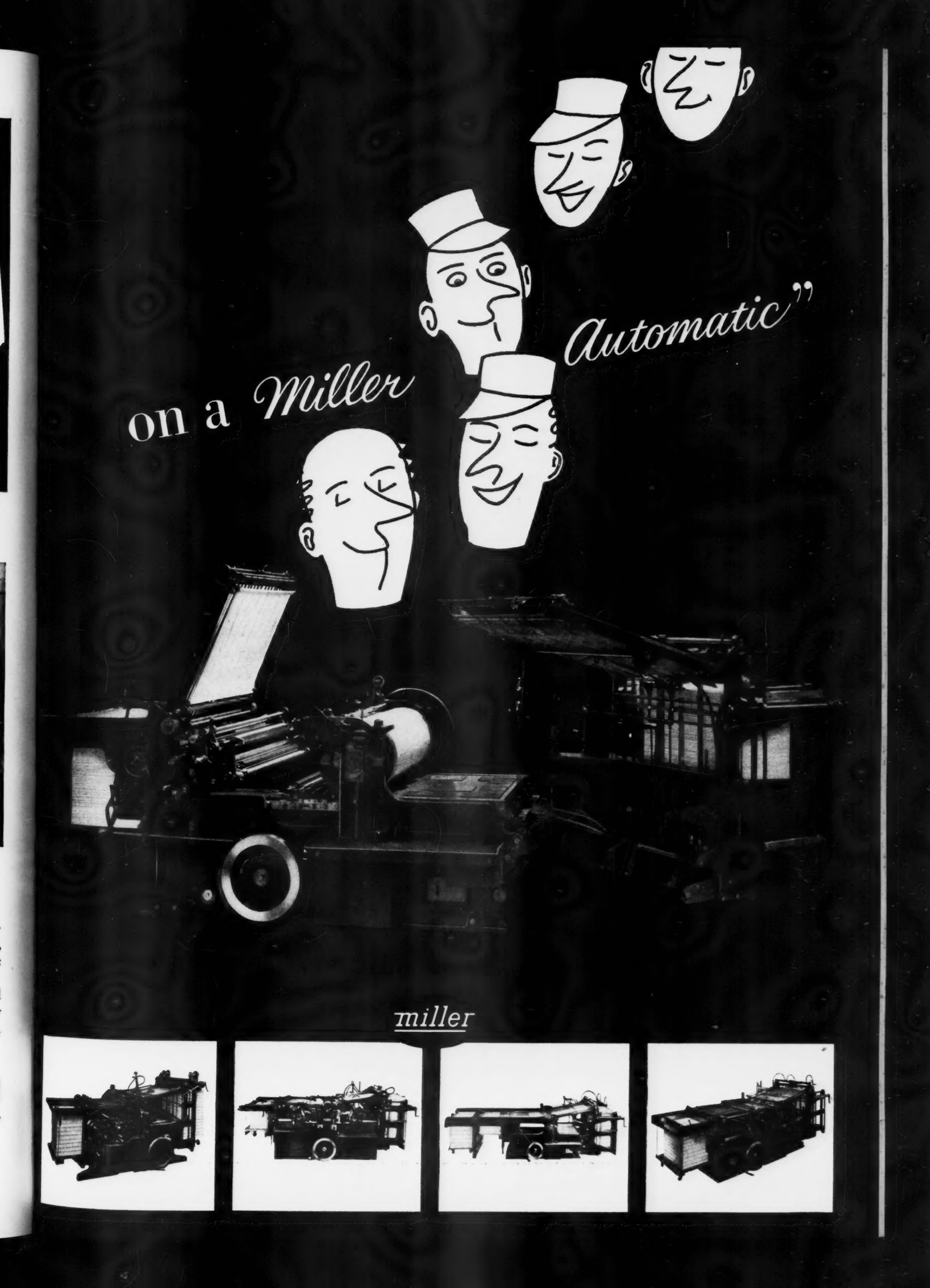
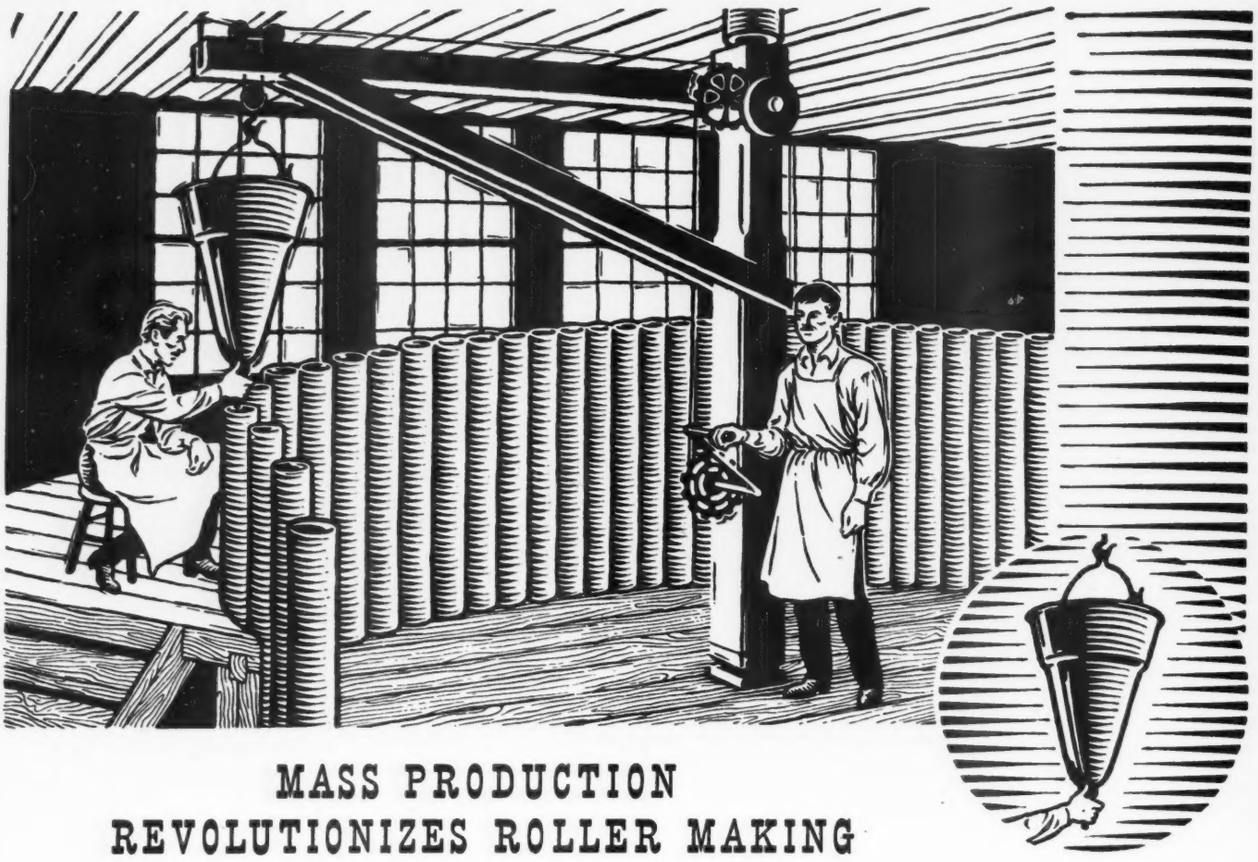

on a Miller Automatic"
miller



MASS PRODUCTION REVOLUTIONIZES ROLLER MAKING

THE YEAR WAS 1877, and American printers were faced with a pressing problem. Fast new presses, new inks and new methods of printing were bringing about a growing demand for more rollers, better rollers, and faster delivery.

In Chicago, gateway to the new West, Sam'l Bingham's youngest son, Millard Bingham, had just opened a printers' rollers shop. His stock in trade was the energy of youth, plus the experience of a generation of roller makers.

His first big problem was solving the bug of mass production. Some way, somehow he must develop a machine that would make better rollers in quantity.

Up until that time, roller composition had been poured by hand into individual molds. Young Bingham invented a crane-like machine with a ladle and spigot that filled the molds in less time and turned out better rollers.

Later he improved this machine, and invented others, always seeking to make more and better rollers.

By giving printers speedy delivery, he made a major contribution to the printing industry and his company, the SAM'L BINGHAM'S SON MFG. CO., today, with over a hundred years of experience behind it, still employs the technology of mass production to supply "the right roller, right away."

OVER ONE HUNDRED YEARS OF ROLLER MAKING

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CLEVELAND 14
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DES MOINES 2
DETROIT 10
HOUSTON 6
INDIANAPOLIS 2

SAM'L BINGHAM'S SON MFG. CO.
MANUFACTURERS OF
PRINTERS' ROLLERS
LITHO-OFFSET ROLLERS

FACTORIES

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KANSAS CITY 6
MINNEAPOLIS 15
NASHVILLE 3
OKLAHOMA CITY 6
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PRINTING EQUIPMENT *Engineer*

Volume 77 Number 2

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

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FOR MECHANICAL AND PRODUCTION EXECUTIVES

The *VIIIth Graphic Arts Production Year Book* should be in the hands of every mechanical and production executive. Commercial and newspaper printing plant executives, will find this encyclopediac volume of constant help to them. A mass of detail which no executive can keep in mind will be found in this book.

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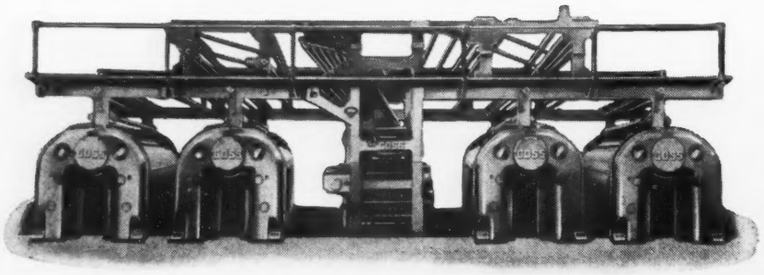

Goss Multi-Color Headliner Press

Goss Speedry Roto-gravure Press

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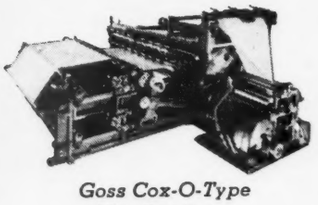
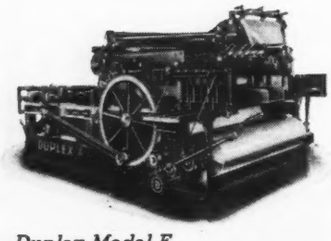
with a Complete Line of Presses



Goss Cox-O-Type Flat-Bed Press

Rotary Presses for All Newspaper Plants

● From flat beds to heavy duty units, Goss and Duplex presses meet every printing requirement of weekly, semi-weekly, and daily newspapers—small, medium and large. Representing a combined experience of 127 years, these presses offer the advantages of economical installation, provision for expansion, quality printing, minimum maintenance, and above all—full color facilities. You are urged particularly to investigate the outstanding features of the Goss Headliner and the new developments in Goss Tubular-type Presses. Write for complete information.



Duplex Model E Flat-Bed Press

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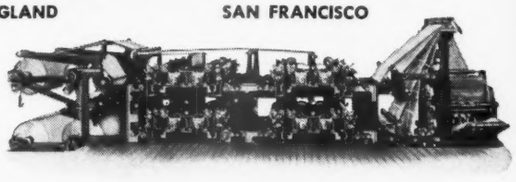
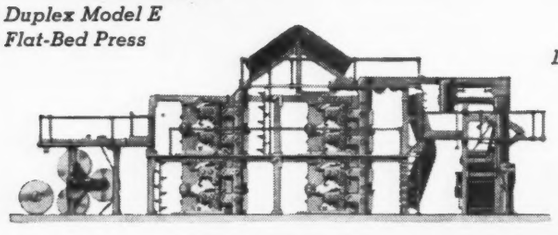
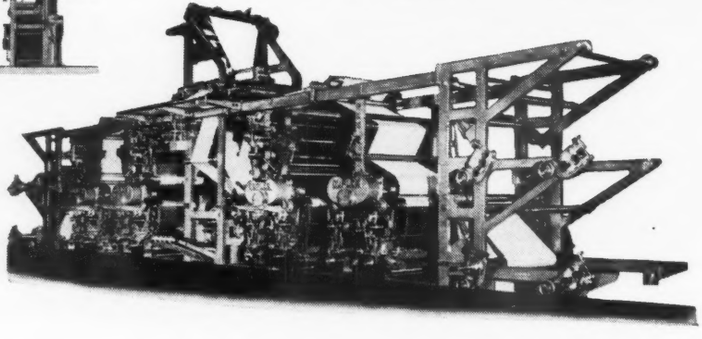
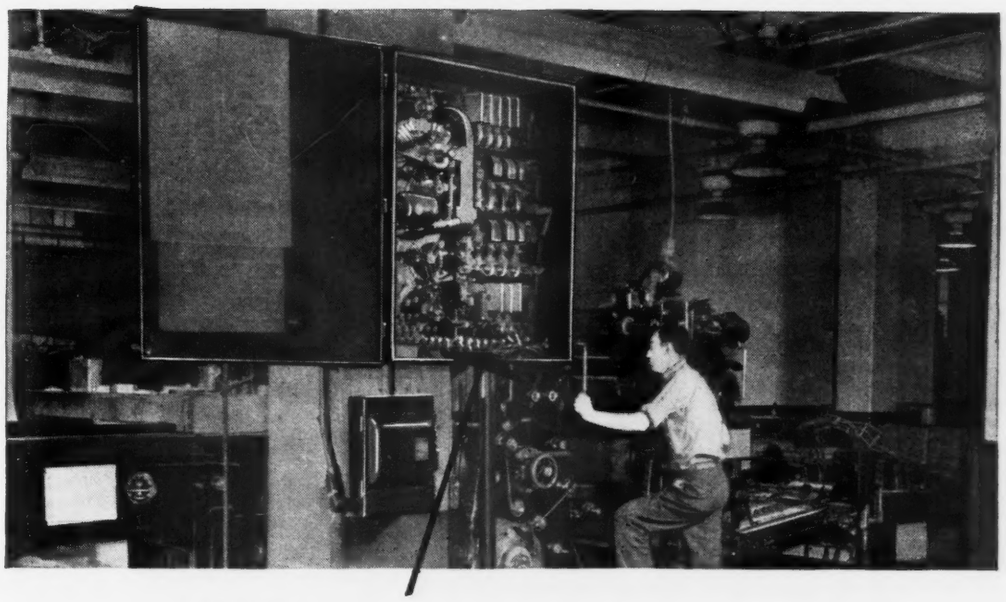




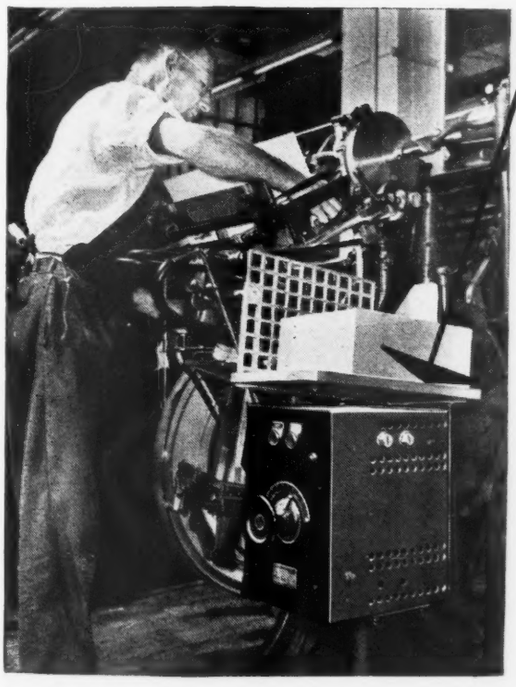
Goss Multi-Color Press



Duplex Unitubular Press



There's a G-E control for every press



Yes, there are standard G-E speed controls for all size job presses—from the small unit which provides a platen press with variable speed, to the large rotary-offset press control which allows jog forward, jog reverse, trip slow-down, remote operation, and adjustable starting and slow-down torque.

Easy to operate, easy to maintain, the simplicity of these controls means a minimum installation cost and valuable space saving for your plant.

Whatever size press you are planning to buy, make sure it's equipped with a G-E speed controller. Call or write your nearest G-E sales engineer now.

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A bulletin giving complete details of the new streamlined G-E press controls. Mail the coupon today.

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Please send me a copy of your bulletin GEA-3469A which describes the new A-C Preset-Speed Printing Press Controllers.

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City ..... State .....

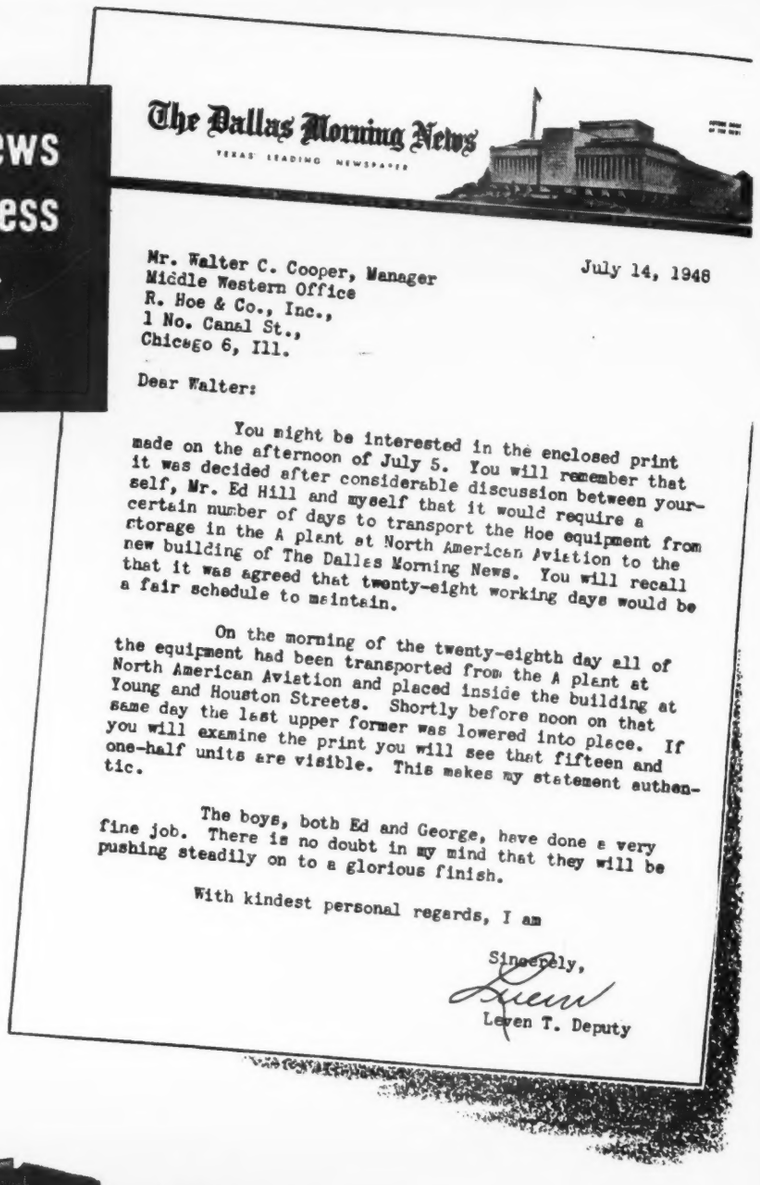
GENERAL ELECTRIC

The Dallas Morning News installs 16-unit Hoe press in *28 days*

This remarkable achievement was aided by the fact that all units, folders, reels, and color cylinders, had been shipped intact, following the practice pioneered by Hoe in 1930.

Their new Hoe Color-Convertible Press will give The Dallas Morning News one of the finest installations in the Southwest. It consists of sixteen printing units, four double folders, eight color cylinders, and other facilities, such as cylinder reversing mechanisms and duo rails, to make possible the printing of full R.O.P. color on a wide variety of pages.

The press is also completely equipped with Hoe reels, incorporating running belt tension and full-speed web splicing features.



The Dallas Morning News
TEXAS' LEADING NEWSPAPER

Mr. Walter C. Cooper, Manager
Middle Western Office
R. Hoe & Co., Inc.,
1 No. Canal St.,
Chicago 6, Ill.

July 14, 1948

Dear Walter:

You might be interested in the enclosed print made on the afternoon of July 5. You will remember that it was decided after considerable discussion between yourself, Mr. Ed Hill and myself that it would require a certain number of days to transport the Hoe equipment from storage in the A plant at North American Aviation to the new building of The Dallas Morning News. You will recall that it was agreed that twenty-eight working days would be a fair schedule to maintain.

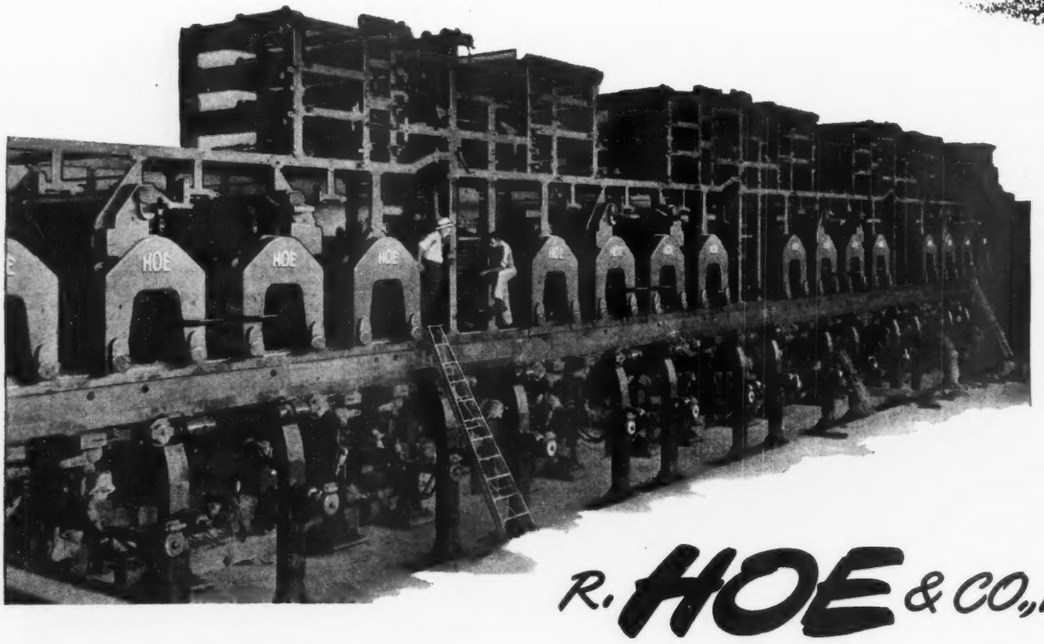
On the morning of the twenty-eighth day all of the equipment had been transported from the A plant at North American Aviation and placed inside the building at Young and Houston Streets. Shortly before noon on that same day the last upper former was lowered into place. If you will examine the print you will see that fifteen and one-half units are visible. This makes my statement authentic.

The boys, both Ed and George, have done a very fine job. There is no doubt in my mind that they will be pushing steadily on to a glorious finish.

With kindest personal regards, I am

Sincerely,

Leven T. Deputy



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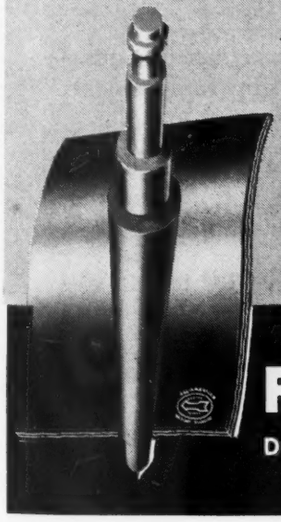
Elaborate experiments have been conducted to determine the perfect consistency for the coatings of Mercury rollers and blankets. As a result, they combine great ink-carrying capacity with the ability to release ink at the instant of contact. Since this is the ultimate test of roller performance, the demand for Mercury rollers and blankets is increasing constantly among leading printers and lithographers.



RAPID ROLLER COMPANY

D. M. RAPPORT, Pres. Federal at 26th Street CHICAGO

Champlain Rotogravure Multi-Color Presses use TIMKEN® bearings for Speed and Precision

Champlain Timken Bearing Equipped 14" 4-color rotogravure printing press. These presses are manufactured in 5 sizes—8", 14", 20", 26" and 36".

Application of Timken bearings on the printing cylinders of Champlain presses.

To permit continuous high-speed operation up to a maximum delivery of 24,000 printed sheets per hour and to assure constant accuracy of the multi-color impressions, the printing cylinders of Champlain Speedry Rotogravure Printing Presses are mounted on Timken precision tapered roller bearings.

To quote the press manufacturer: "The use of Timken tapered roller bearings has guaranteed built-in reliability and there is no record of bearing failure or any replacements due to wear in the cylinder bearing assembly."

The Champlain rotogravure press is one of the fastest commercial multi-color presses in the world and operates at speeds up to 24,000 multi-color sheets per hour.

Timken bearings are used in modern printing equipment of all types including letterpress, rotogravure and lithographic presses for newspaper, magazine and commercial printing, from one to eight colors. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address "Timrosco".

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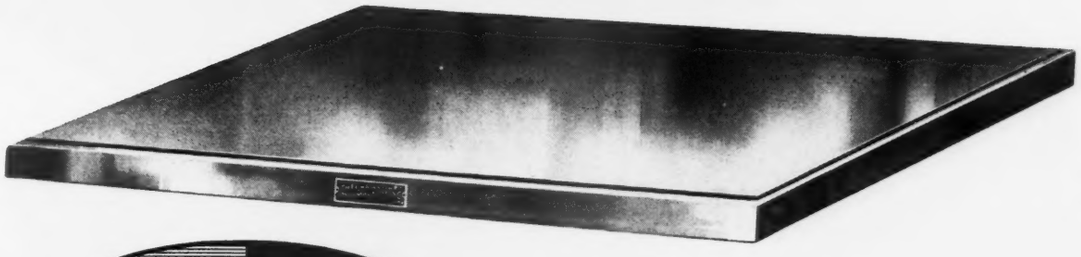

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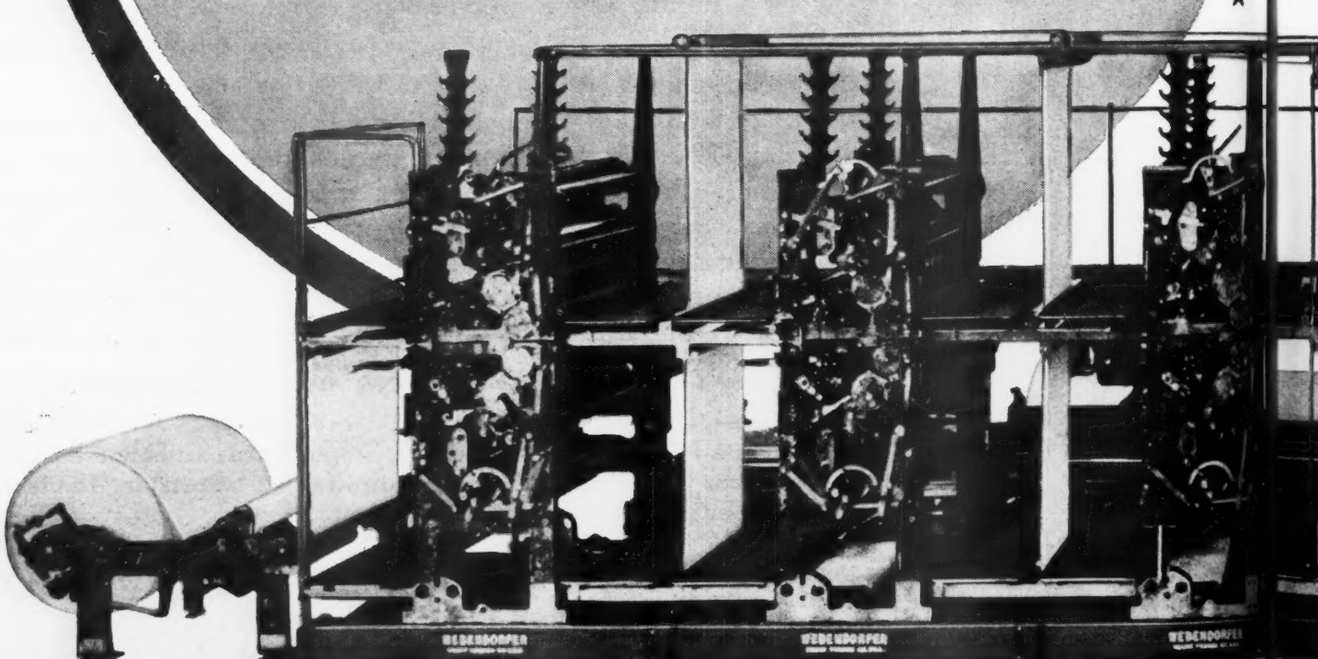
for **newspapers, tabloids, shopping guides, magazines, comic books, direct mail, flat work (including wrappers, posters, broadsides)**



from this press you can get

One 16-page newspaper, one color each side, 17½x22¾ inches

One 32-page tabloid, one color each side, 11⅜x17½ inches

One 8-page newspaper, two colors each side, 8¾x11⅜ inches

One 32-page signature, two colors each side, 8¾x11⅜ inches

One 8-page newspaper, 4 pages 3 colors each side, and 4 pages one color each side

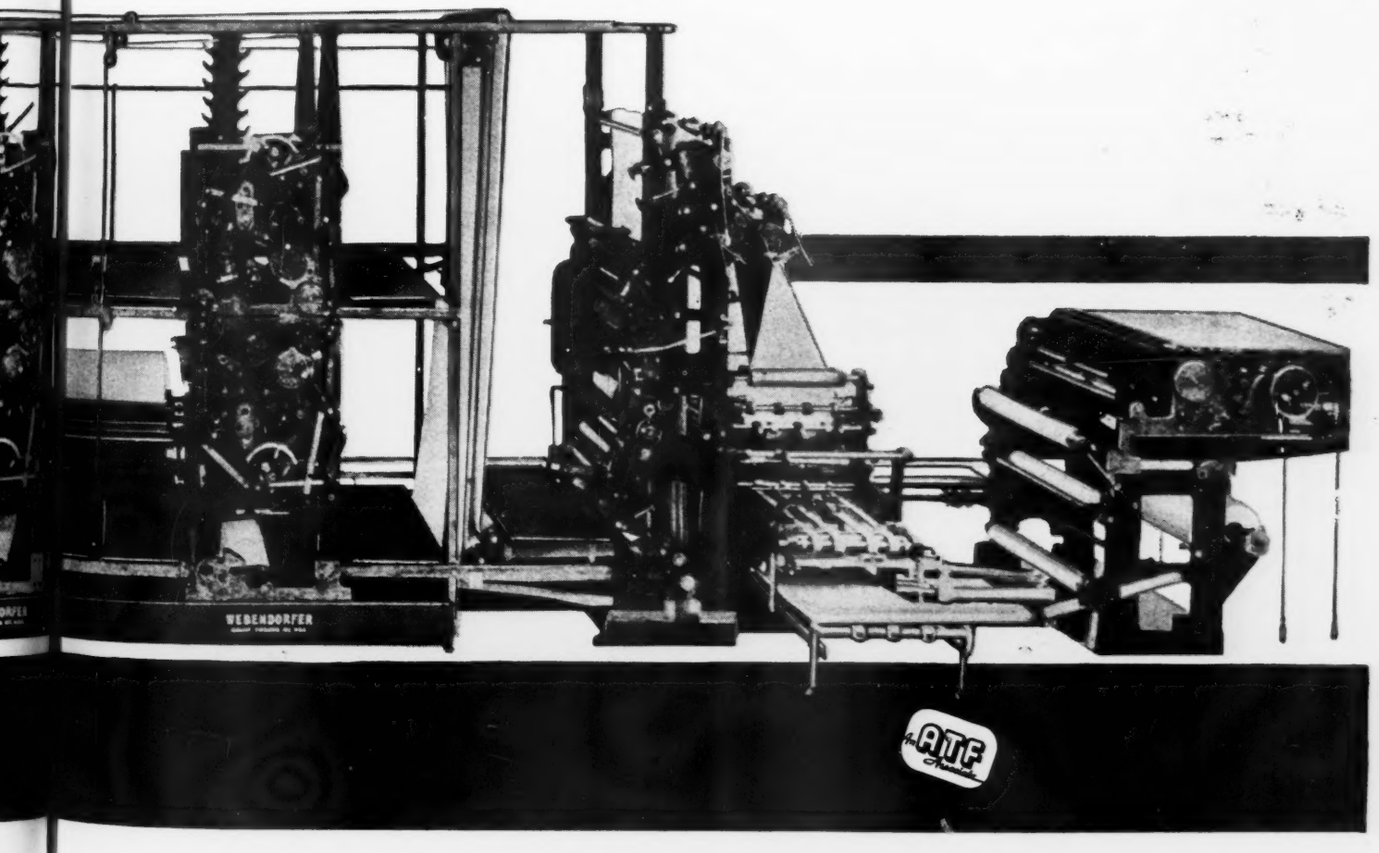
One 16-page tabloid, 8 pages 3 colors each side, and 8 pages one color each side

One 32-page signature, 16 pages 3 colors each side, and 16 pages one color each side

One 4-page newspaper, 4 colors each side

One 8-page tabloid, 4 colors each side

One 16-page signature, 4 colors each side



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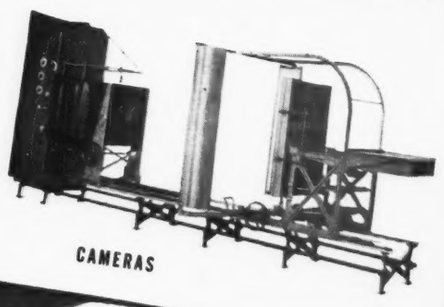

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COLD GRID PRINTERS

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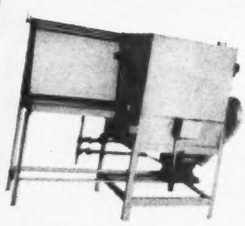
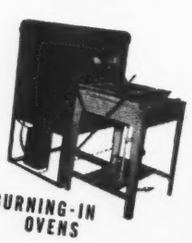


ETCHING MACHINES



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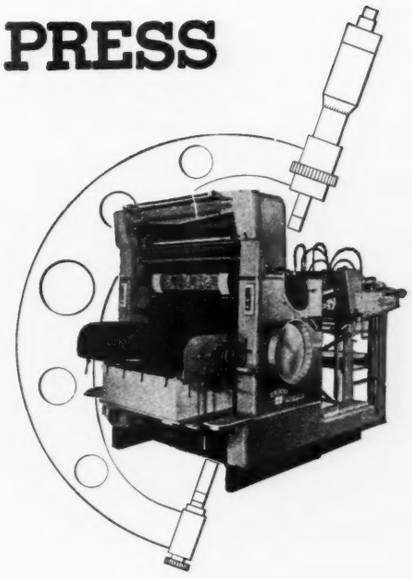
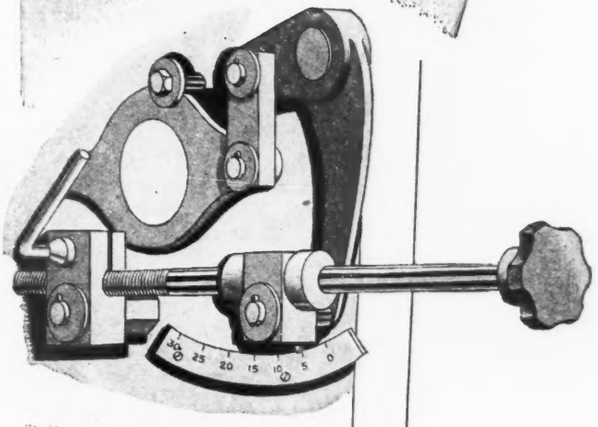


Registers with Lithographers



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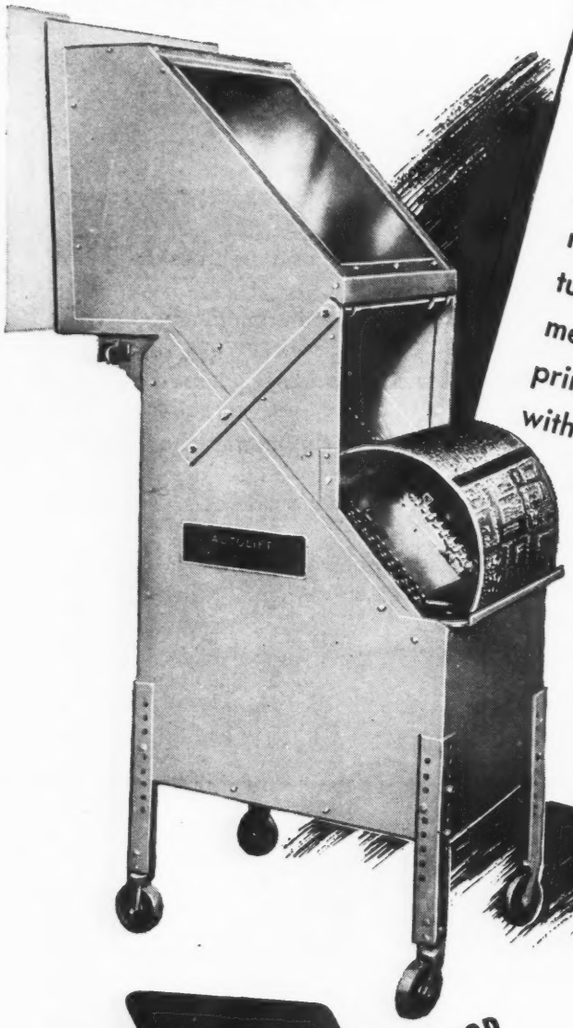

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IONOTRONS end "intolerable static condition" for Susquehanna Plastics, Inc.

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Mr. George T. Howe, Plant Manager at Susquehanna Plastics, says:

"Due to the high speeds at which our presses are run, the plastic films would create an intolerable static condition if it were not for Ionotrons. They reduce fire hazard, improve spread of ink, avoid static shocks to personnel, and insure the delivery of static-free films."

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When the Ionotron can solve a severe static problem like the one described above, you can imagine how well it will work on your own presses – whether letterpress, offset, or gravure – no matter what types of stock you handle.

Printers report that Ionotrons step up production in all printing operations. These modern static eliminators have important advantages you cannot obtain with any other unit. For illustrations and descriptions of the Ionotron in printing applications. write for Bulletin 8.3, *Dept. S-7, U. S. Radium Corp., 535 Pearl St., New York 7, N. Y.*

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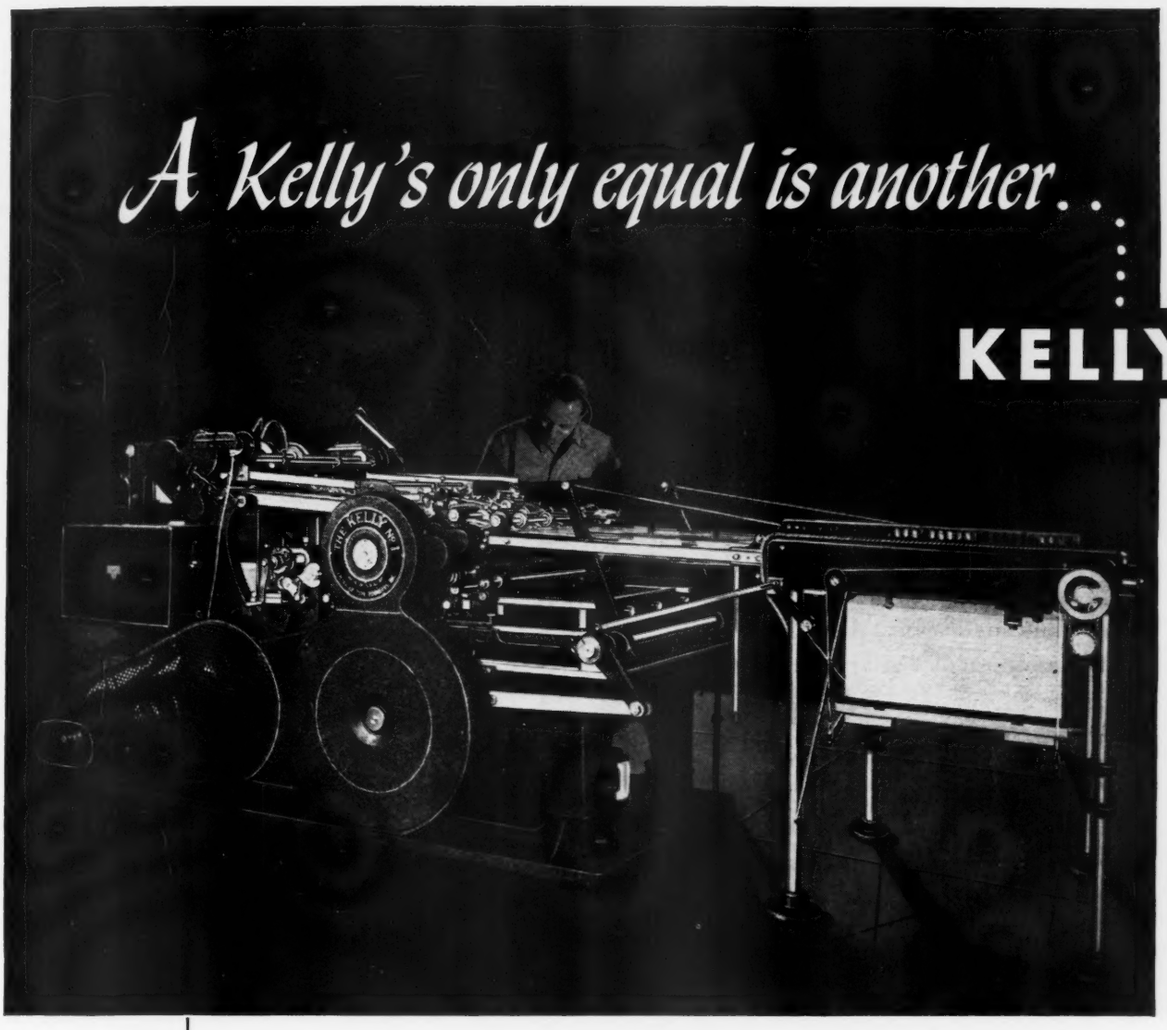

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The Long and short of it

Independent research shows that the visibility of this type is approximately the same as that of the reference marks on linotype and intertype matrices which have been processed the Matrix Contrast way. By the same tests, the copy at the right has the approximate visibility of unprocessed reference marks on matrices that have been in use for some time. The studies were conducted by Dr. Matthew Luckiesh, Director of the General Electric Company's Lighting Research Laboratory.

Operators can "see what they set" when machines are equipped with sharp, clean-etched Matrix Contrast reference marks. Further, with the new Matrix Contrast Colors operators can tell at a glance if there's a wrong font letter in the line. With colored reference marks, different fonts have their own distinguishing color. You can't miss the contrasting color of the wrong-font letter. Compare this type with that at the right. There's an eloquent difference in visibility between them.

This torturing type is the approximate equivalent of what operators are forced to read when they hunt errors with unprocessed matrices. Eyestrain and fatigue are lessened when reference marks have been processed the Matrix Contrast way. Linotype and Intertype operators throughout the country have told us how much less strained and tired they feel after a day's work at machines that have been processed the Matrix Contrast way.

The difference speaks for itself. In the words of Dr. Luckiesh: "The processed matrices have a visibility approximately equivalent to 9½-point type (Printed with black ink on white paper) . . . as compared with the non-processed matrices which have a visibility equivalent to 3-point type under the same test conditions."

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Matrix Contrast Service

DR. R. M. SCHAFFERT (left) is head of Graphic Arts research at Battelle Institute, has had primary responsibility for development of xerography. It is related that most of the laboratory work and practically all of the "imagineering" that went into early stages of development came from his hands and brain. Early in his career, Dr. Schaffert was a printer. He holds an A.B. degree in physics from Doane College, Crete, Neb., and M.A. and Ph.D. degrees from University of Cincinnati. At one time he was research physicist with Mergenthaler Linotype Co.

CHARLES D. OUGHTON (right) assisted in supervision of Battelle development work on xerography and has made major contributions to it. Before 1945 he was a research physicist with Bausch & Lomb Optical Co. He's a graduate in physics from DePauw University and the University of Michigan, from which he holds A.B. and M.A. degrees respectively.

Xerography

(ze-rog'-ra-fee)

An electrostatic process for platemaking and inkless printing demonstrated in swaddling clothes — Predicted Xerography will be fourth printing method.

By MacD. SINCLAIR

A TREMENDOUSLY fast electrostatic process of positive-to-positive letter and document reproduction, continuous tone photography, offset-lith platemaking, and printing without ink was demonstrated in its swaddling clothes at a private preview at the Waldorf-Astoria Hotel, New York, N. Y., on Tuesday, October 19. At the Friday, October 22 session of the Optical Society of America in Detroit, the process was demonstrated by Dr. R. M. Schaffert of Battelle Memorial Institute and Joseph C. Wilson of The Haloid Co.

Developers of the new dry process called Xerography (ze-rog'-ra-fee) make use of static electricity and a dry powder to produce line or continuous tone pictures, type-composed reading matter, engineering drawings, documents, copying of letters, and to print on high speed rotary presses. In the process, the usual photographic sensitized papers and chemicals are eliminated, and as stated above, the standard types of printing inks are also eliminated.

Halftone Development in Initial Stages

It was pointed out by Dr. Schaffert that at present the xerographic process is most suitable for reproducing printed matter, typewriter-typed copy, drawings and line illustrations or diagrams. Development of means for reproduction of continuous tone images from photographs is in its initial stages.

The Xerographic process was developed by Battelle Memorial Institute, Columbus, O., and commercial applications are being handled by The Haloid Co., manufacturers of sensitized photocopy and photographic papers and photocopy machines, Rochester, N. Y.

Inventor of the basic principles of the xerographic process is Chester F. Carlson, a patent attorney of New York, N. Y. Some time ago he licensed Battelle Memorial Institute to develop the process. The Haloid Co. has acquired from Battelle the rights to use and license the process and is sponsoring much of the research on xerography currently being carried on at Battelle. The Department of the Army, Signal Corps, is also sponsoring continuing research on the process.

Photographic Portrait in 45 sec.

The demonstration was conducted from a small laboratory set up on a platform in the Le Parroquet Room at the Waldorf-Astoria. Examples of xerographic reproduction were shown on paper, cloth, wood, and other materials. During the demonstration reproductions of engineering drawings and business letters were made by contact and projection printing. A dry continuous tone portrait of a living subject (Mr. Rheinfrank of Battelle) was made in 45 sec. and projected upon a screen for the audience to see.

Xerocamera

Dr. Schaffert, Supervisor of Graphic Arts research at Battelle Memorial Institute, said that the many potential advantages of the xerographic process over standard picture taking "excite the imagination." He said: "Conceivably, when fully developed, the entire process can be incorporated in a portable xerocamera. With such a camera the picture taker can snap the shutter and in a few seconds pull out a finished xeroprint. If he doesn't like the picture, he can discard it and try again, using the same xeroplate." When used in the camera the present sensitized xerographic plate ap-

Fabian Bachrach

C. F. CARLSON

Inventor of xerography; is a physicist; is a member of N. Y. bar; is practicing patent attorney.

J. C. WILSON

President and general manager of The Haloid Co. licensee of xerographic process.

CLYDE WILLIAMS

Director of Battelle Memorial Institute is one of the nation's leading research administrators. It was he who gave the go-ahead signal which made possible early development work at Battelle on xerography. He holds honorary doctorate degrees from the University of Utah and from Case Institute of Technology.

proaches the speed of silver halide projection papers.

Xerocopying Machine

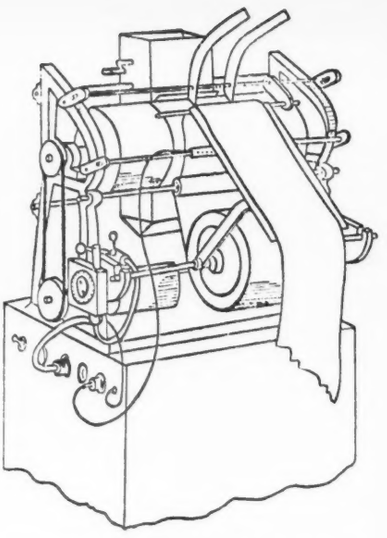
Joseph C. Wilson, president of The Haloid Co. announced that a xerocopying machine for reproducing copies of letters, documents, engineering drawings and line work is being developed for the market. He also stated it is possible that the stenographer of the future will not have to make carbon copies. She will type the original letter, slip it into a xerocopying machine, set a dial to the desired number of copies, push a button and the required number of permanent copies will be "xerographed" by the machine in a few seconds.

Generic Term

Xerography (ze-rog'-ra-fee) is a generic term for the formation of images by dry electrostatic means. It is from the Greek words "xeros" meaning dry, and "graphos" meaning writing.

Two Fundamentals of Physics Employed

Two well known physics fundamentals are employed in xerography. One is the principle of photoconductivity or the ability of certain materials to become electrically conductive when acted upon by light, but are nonconductors of electricity in the dark. The other principle is the triboelectric effect,[1] or the electrical attraction (or magnetism) which exists between two dissimilar materials of positive and negative polarity.



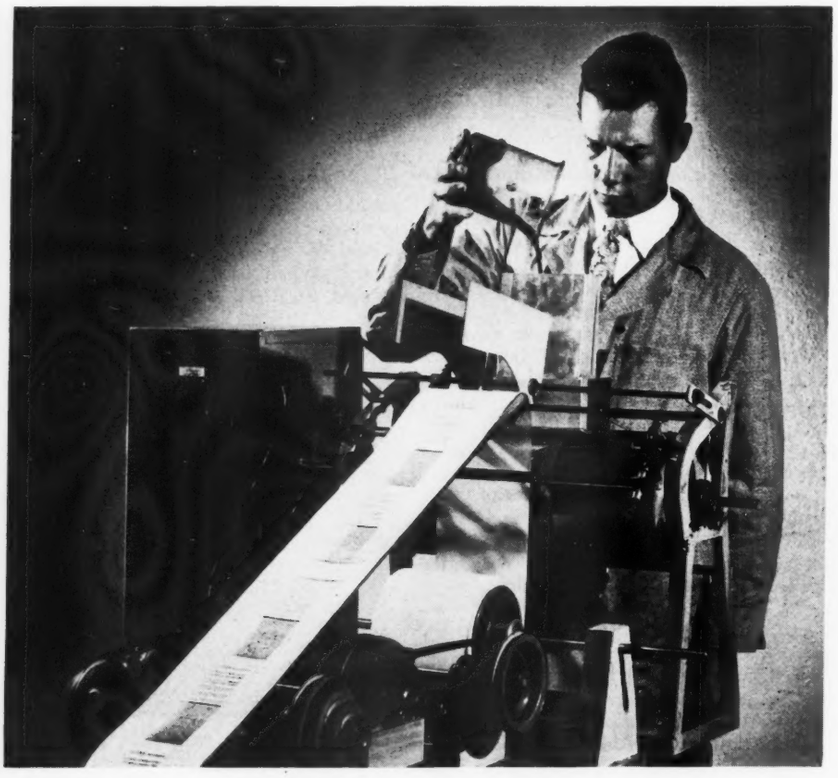
Reduced one-half size, this cut of a xeroprinter was made from a line illustration printed on white paper by the xeroprinter. In its present state of development, the xerographic process is suited to reproduction of line illustrations and type matter. Printing was done from a curved plate, the image being approx. 12 in. depth including type matter accompanying the illustration.

As has been stated above, Xerography is a dry, electrostatic method of image reproduction in contrast to other processes such as silver halide photography or blue printing which are chemical in nature.

Sensitizing the Plate

The photoconductive plate used in xerography corresponds to the film or paper used in ordinary photography. For the letterpress printing executive, it might be said that it is comparable before processing to the unsensitized zinc or copper plate upon which a photoengraved printing image is to be produced; for the offset-lith executive, it corresponds to a grained plate which has not yet been sensitized.

This photoconductive plate (or support) may be aluminum or certain other electrically conductive metals, the face of which is coated with a thin photoconductive insulating material. This coating is a nonconductor of electricity in the dark, but becomes conductive when exposed to visible light. Anthracene is one material that may be used as a photoconductive coating. Battelle reports, however, that more sensitive formulations have been developed. The photoconductive coating is permanent and the plate will last indefinitely even though used repeatedly. The device for coating the plates or coating support is a special piece of equipment.



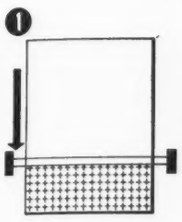
Photos by Ralph Ernst

Experimental model of xerographic "printing" machine. With this experimental machine, Battelle engineers have achieved a press speed of 1200 web feet per min. Printing is pressureless, the powder being transferred electronically from plate to paper. Here the technician is replenishing the dry powder supply contained within the developing chamber. The powder printing image is developed immediately after each "impression," or the transfer of powder to paper.

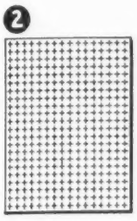
[1] *Triboelectric effect*—The property whereby two substances in contact with one another build up positive and negative charges through friction and thereby have affinity for each other.

Xerography —

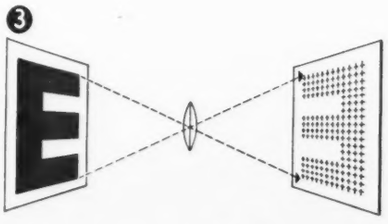
How It Works



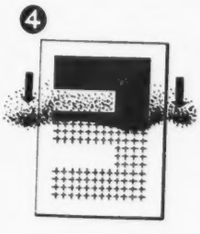
1.—For the purposes of this elementary explanation, an electrically conductive metal plate is coated with a thin photoconductive insulating material. This coating is a nonconductor of electricity in the dark, but becomes conductive when exposed to visible light. In this diagram, the plate is being sprayed with electrons while being passed under a corona spray apparatus which is in a fixed position. Approx. one-quarter of the plate has passed the corona spray device as is indicated by the portion of the plate covered with plus (positive) signs to show electrically charged surface.



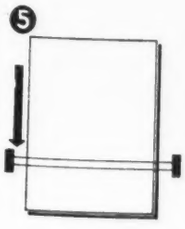
2.—The entire plate shown here is covered with plus signs to indicate that the coating of the plate is charged with positive electricity.



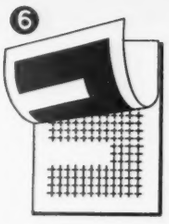
3.—The copy (in this instance the black letter E) is projected through a lens to the plate in a camera. The plus marks indicate the projected image with positive charges. The positive charges disappear in areas exposed to light as shown by the white area on the plate.



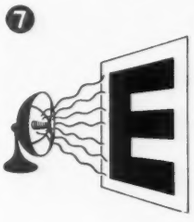
4.—When negatively charged powder is flowed or dusted over the plate it adheres to the positively charged image on the plate.



5.—After the powder has been applied to the plate as shown in diagram Fig. 4, a sheet of paper is placed over the plate. The plate with the paper on top again is passed under the corona spray device in the direction indicated by the arrow. In this operation the plate receives a positive charge.



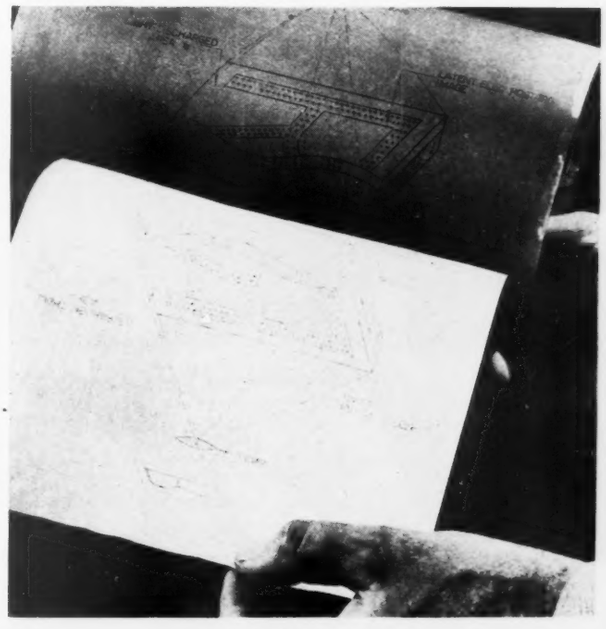
6.—The positively charged paper attracts the powder from plate to paper to form a direct positive image on the paper.



7.—The "printed" image on the paper which was produced without pressure is heated for a few seconds in the manner shown or by placing the sheet between heated platens to fuse the powder to form a permanent "print" or copy of the image. In photomechanical parlance, xerography is a positive - to - positive reproduction process.

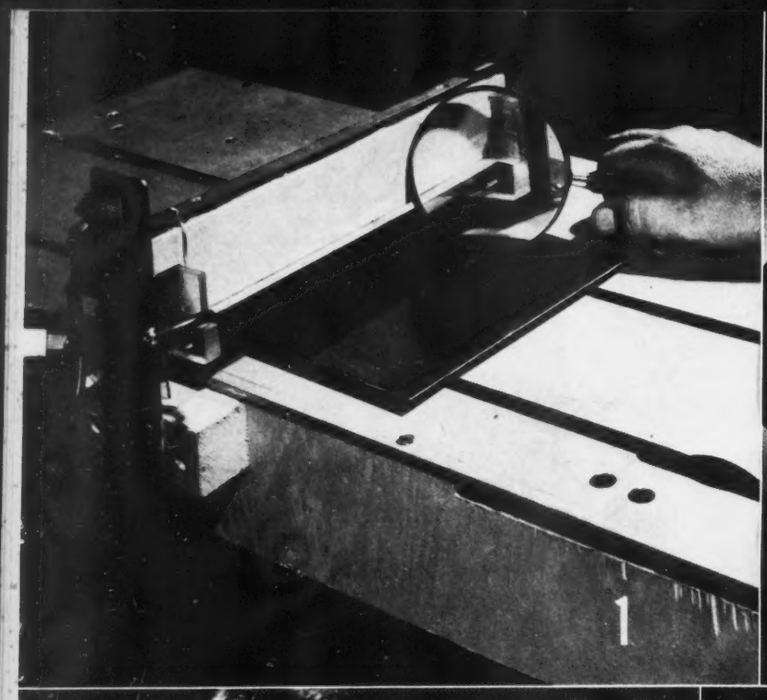
Platemaking

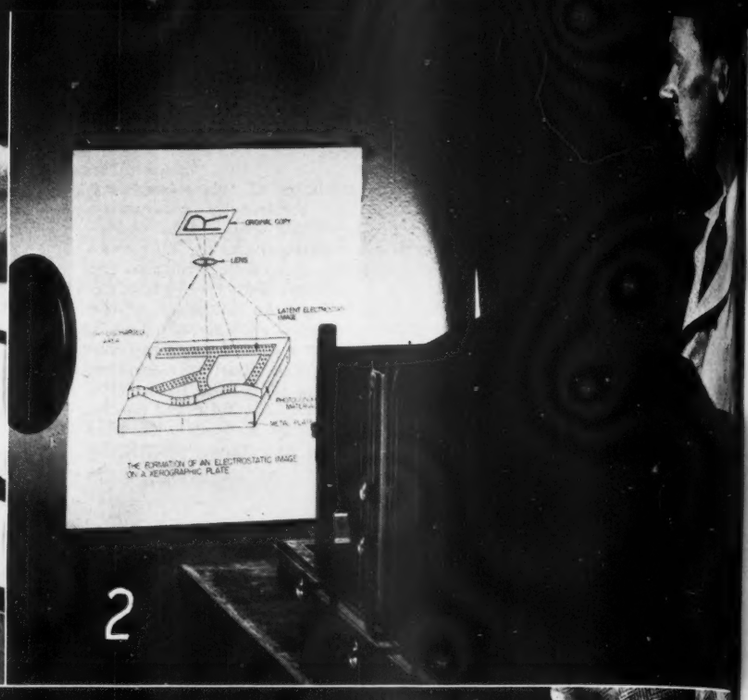
By Offset and Photoengraving

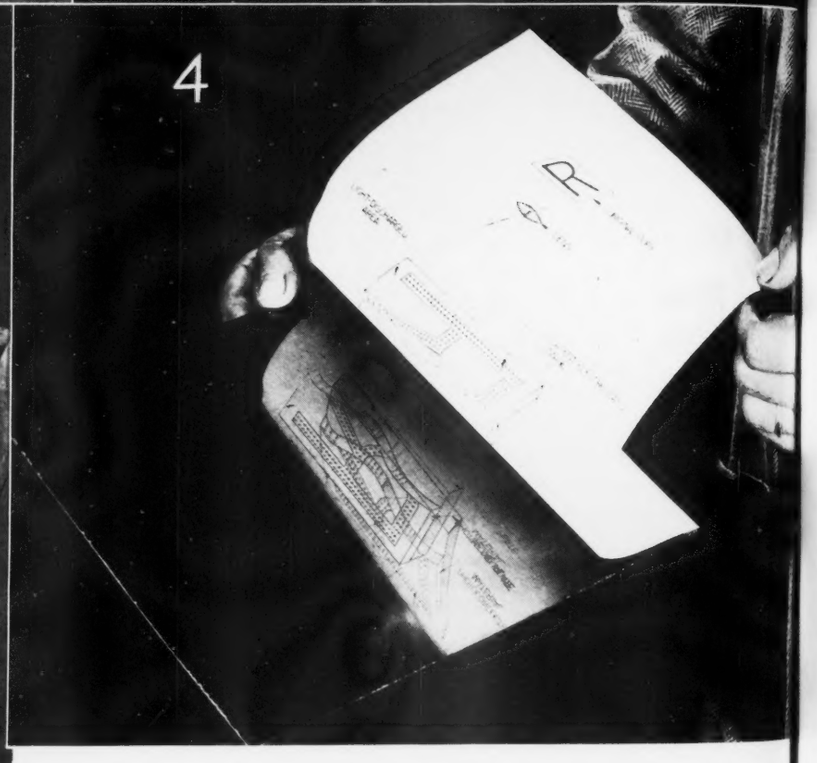


It has been announced by Battelle Memorial Institute that one of the applications of the xerographic process will be to make printing plates such as offset-lith and letterpress plates, offset duplicator plates, and photoengravings. Several methods may be used, the simplest of which is illustrated here. In this picture the technician is preparing a zinc offset duplicator plate. A powder image on a sheet of paper has been transferred to the zinc plate electrostatically and the paper is being stripped from it. The residual image on the paper represents an excess of developing powder and will not lessen the intensity of the printing surface. The next step will be to fuse the powder image to the plate, after which it will be ready to fasten on the plate cylinder of the printing press.

In preparing to make a photoengraved plate, an additional operation is required to prepare the plate with acid resist. The powder image is transferred from the xerographic plate to paper electrically. Then the image on the paper, in turn, is transferred from the paper to the copper or zinc plate, again by electrical means. The plate now bears a mirror-reversed image which is acid resistant to the etching solution.







Steps Taken in Making Xerograph Plate

By Electronic Process

1.—Laboratory model of only specialized apparatus required for xerographic reproduction. It is used both to sensitize the plate and to transfer the powder image from the plate to paper. Called a corona spray apparatus, it sprays electrons from the fine wire visible through the enlarging glass. When a plate is passing under the wire on the carrier belt, as in this picture, the electrons create an electrostatic surface charge. When a developed plate superimposed with a sheet of paper is passed under the wire, the image is transferred to the paper.

2.—The xerographic plate may be exposed in a camera, under an enlarger, or in a contact printing frame. Light striking the surface of the plate causes it to lose its electrostatic charge, leaving behind a pattern of electrons corresponding to the image pattern. In this photograph a technician is preparing to make a reproduction of a line drawing.

3.—Following exposure, the plate is developed by flowing developing powder across its surface in a rocking tray. Oppositely charged particles of developer are released from larger carrier bodies and become attached to the image areas. A similar triboelectric technique is used to clean plates before sensitizing.

4.—Xerographs may be made on any type of paper, on wood, glass, metals, or other materials. In the picture the technician is stripping the transferred print from the plate. Heating the print will fuse the powder to the paper and make the image permanent.

When the coated plate is rubbed briskly with a cloth in the dark, or when it is sprayed with electrons by being passed under a corona spray apparatus, the coated surface becomes electrically charged in a few seconds. In the charged condition, the plate is sensitive to light and holds an overall charge of positive electrons. So long as it is confined to the dark the electrical charges will not be carried away.

Exposing the Plate

The sensitized plate as described above is now ready to be exposed in a camera. The plate is treated in the same manner as regular photographic film or plate in a standard plate holder with which everyone is familiar, to keep light from the plate before actual exposure. The plate may be exposed in the camera, under a projection lens, or in a contact printing frame in the same manner that a silver emulsion film or paper is exposed to an image pattern. Wherever light strikes the plate, the coating becomes conductive and discharges the electrostatic surface charge into the aluminum plate or support. On the areas where light does not fall, the surface charge remains. Thus the image pattern causes a latent electrical image to remain on the plate or support. The exposure is equivalent in elapsed time to that required by fast silver halide projection papers. In other words, where light strikes the coating the coating becomes a conductor, the positive charges being carried off through the metal plate or support. Where light has not struck the surface of the plate or support the charges remain.

Developing the Plate

What is called the developing operation is performed by flowing specially prepared powder over the plate. This powder consists of two components—one a relatively coarse carrier material, and the other a superfine (micronized) developing resin. The developing resin powder may be asphaltum or synthetic resins having a low melting point (and as Battelle explains: "other desirable characteristics").

When the powder is flowed over the plate, the asphaltum particles, being charged with negative electrons, respond to triboelectric magnetism and adhere tenaciously to areas in the plate bearing positive charges. The light-struck portions of the plate cannot retain the powder and it rolls or flows off the plate. The result is a mirror-reversed (positive reversed image) of the original subject or copy formed by the powder on the surface of the plate.

This corresponds to the developed negative in silver-emulsion photography, only a few seconds being required to develop the plate. This operation is somewhat analogous to the making of an offset-lith plate, or a plate which is ready to be etched by the photo-engraving process, provided that on both plates the image were to be fixed by heat treatment. In the former case, the plate would be ready to be mounted on the offset press cylinder, and in the other the printing image on the plate would be coated with a resist ready for etching in the manner usually employed by photoengravers.

Making the Permanent Plate

The next step is to make a permanent print on paper from the developed (resin powder coated) image on the plate. This is done by laying a sheet of paper over the powdered plate and passing plate and paper under the same electronic device (corona spray apparatus) which was used to sensitize the plate. Under the influence of the electronic rays, the powder particles relinquish their affinity for the plate and are attracted to the charged sheet of paper. During this transfer of the powder to the paper, the image is restored to its true left-right relationship—that is, it is "right side up". By the simple process of passing from the plate to the paper, the image is changed from a positive reversed image on the plate to a positive on the paper.

Fixing the Image

The next step is to fix the image on the paper, because if it were not fixed it would easily smudge. Fixing is accomplished by heating the paper for a second or two. Heat melts the powder granules and fuses them to the paper. Heating may be done with infrared lamps, with an electrical oven or simply by placing the paper sheet between heated platens. The fusion temperature is no higher than that ordinarily used for drying or ferrotyping silver-emulsion prints in photography.

Picture Taking

It has been explained in the first part of this article that development of means for reproduction of continuous tone images from photographs is in its initial stages.

At the moment, it appears that exposure to light in a camera dissipates the electrical charge completely on the plate in the extreme highlights so that no powder adheres to the plate in these areas. In the middletones, the charges are only partially diminished on the plate and these areas attract some powder. In deep shadow areas, the full charge remains on the plate and these areas attract larger amounts of powder. Tones are rendered by the amount of charge remaining in the various plate areas after exposure, and the powder develops in proportion to the electrical charge.

Rotary Printing by Xerography

Xeroprinting is a variation of the xerographic process. It, too, is based upon triboelectric effects and the attraction of powder to an electrostatic charge. However, it does not employ the principle of photoconductivity.[2]

In its present state of development, Battelle explains, xeroprinting involves the following operations:

A plate is made which consists of an image of electrically insulating material on an electrically conductive metal backing or support. The plate may be made by conventional photomechanical processes (as in photoengraving) or by the xerographic process, or probably by a typewriter in which would be used a special carbon paper to provide the electrically insulating image material. The plate is mounted in curved form on the plate cylinder of the press. In the printing "press" or machine is incorporated

(1) A rotating cylinder upon which the xero plate is mounted and is curved to fit the curved surface of the cylinder.
(2) A charging device (corona spray device) by which the plate is charged.
(3) A mechanism by which the image is developed with a powder developer.
(4) A mechanism for transferring the powder image to paper.
(5) A mechanism for fixing (heat device for fusing) the powder to the paper.
(6) A cleaning or auxiliary device that may be required to remove excess powder particles from the paper.

Sequence of Press Operations

When the press is running the following operations occur in very rapid order:

The curved plate mounted upon the cylinder passes under the corona discharge device where an electrostatic charge is imparted (sprayed with electrons) evenly to the plate. The charge immediately passes off the conductive or non-printing surfaces of the plate, but remains on the insulating or printing surfaces.

As the cylinder continues its revolution, the plate passes a developing chamber from which a powder is cascaded against it. The powder adheres to the parts of the plate (the "printing" image) which retain the electrostatic charge.

Continuing its revolution, the cylinder carries the plate under the paper; the paper is fed into the machine by standard paper-feeding mechanisms. The paper and plate pass under corona discharge points where the image is simultaneously transferred to the paper and the plate is recharged immediately after for the next revolution of the cylinder.

The paper, bearing its powder image, then is passed through a heating unit where the powder image is fixed (fused) by heat to the paper, or it may be passed under a spray to fix the powder image by solvent to the paper.

It is contemplated by developers and sponsors of xeroprinting that high speed lightweight presses can be used in printing because no printing pressure is required. The use of dry powder in place of ink eliminates strikethrough, offset and smudging of the printed image.

[2]Property of the plate coating (resinous substance) to conduct electricity upon exposure to light.

Research and Standardization in the Composition Industry

THE International Typographic Composition Association has taken a bold step. It is going to establish a new Department of Technical Research and Standardization. Speaking bluntly, *Printing Equipment Engineer* hopes the membership will have the guts to stick with it.

The purpose of the new Department, according to announcement, is to increase production and lower the cost of operating ITCA composing rooms; another purpose will be to promote the adoption of such office and composing room methods and practices as will lend themselves to standardization for general application in the plants of members.

Activities of the new Department will be pointed to apply proved principles and practices of scientific engineering and research to the operation of the mechanical side of ITCA composing rooms; to compile production records and other data and to recommend and report to ITCA members.

Under the direction of a graduate mechanical engineer, who in turn will be subject to the executive director's supervision, the Department will function to investigate, report and make recommendations pertaining to

Production from machines and other equipment
New Attachments, devices, materials and processes
Operational procedures of all kinds
Management methods and practices
Standardization of bookkeeping and cost-finding methods, factory forms, etc.
Problems of plant layout, machine and hand production, personnel, etc., will be subject to investigation to increase production and lower production unit cost of operation in ITCA composing rooms

Executive Director Frank M. Sherman stated that the cost of operating the Department initially will be borne by ITCA members. Eventually other associations in the trade will be invited to participate in this service in order to expand activities to include all phases of composing room operation in the printing trades.

Provided the new ITCA activity develops along lines as planned, it seems to this magazine that no great obstacle would be encountered ultimately in securing cooperation and support of firms maintaining composing rooms other than those now immediately identified with ITCA membership. Irrespective of the major products of the many companies in the industry, a common ground for improvement in the efficiency of composing room operation exists.

Metamorphosis?

[*An Editorial*]

AN IMPORTANT trend has recently developed in the Graphic Arts industries. It recognizes that production and mechanical executives really are important administrators. While these men long have known that their duties are important, management has been deficient in recognizing them as instruments of management. While not giving the recognition to which they are entitled, management has realized the responsibilities of mechanical executives.

Now, it seems almost trite to state management belatedly is willing to recognize the situation simply because labor and materials costs have risen to great heights. Therefore, something must be done to treat rank and file employees as though they are human beings rather than just so many cogs in a mechanical contraption. The production and mechanical executive is the instrument through which the mental connections between the mechanical and managerial departments of the plant can be improved.

The three straws in the wind which indicate an awakening of management with respect to the maximum functions of its production and mechanical executives are (1) the proposal by Frank M. Sherman, Executive Director, that the International Typographic Composition Assoc. sponsor a short-term course in plant administration, human relations and human behavior in the printing plant for superintendents and foremen at some nationally-known school. The idea had hearty approval of the Association at its recent Minneapolis convention. The approval carries considerable weight because ITCA members altogether are representative of the owner-management group. Their thinking with respect to the foreman training course is all the more effective because most of these men have risen from the ranks.

Another instance (2) is that the July ANPA Mechanical Conference in Pittsburgh devoted one day's session to human relations in the newspaper plant. Unlike the ITCA group, however, production and mechanical executives attending the ANPA Mechanical Conference are not owner-manager executives, but are engaged purely for their abilities to supervise and administer mechanical production in the newspaper plant. Before the close of the Pittsburgh ANPA Mechanical Conference it was voted unanimously to again have human relations sessions at the 1949 Chicago Conference. Some of the country's finest human relations authorities spoke. Among them were Ray S. Tannehill, Secretary-Treasurer of the Bell Telephone Co. of Pennsylvania; Dr. Ralph L. Lee, Public Relations Director, General Motors Corp.; A. C. Croft, President of the National Foremen's Institute, and a number of lesser known in-plant speakers whose companies seem to have recognized the importance of human relations.

The third straw in the wind was the address of Donald L. Boyd, retiring President, at PIA's recent Chicago convention. (PIA is the commercial printing industry's management association.) At this meeting, Mr. Boyd challenged top management to do a better job in personnel relations. Because of the industry's growth and consequent consolidations of smaller into larger units, he stated much more skill is required (from the human relations standpoint)

to handle a hundred men than to handle only ten men. This responsibility must now be delegated—not in policy but in execution. While Mr. Boyd's statements were not made to refer specifically to production and mechanical executives as representatives of management, yet his outspoken attitude is encouraging. This recognition of a major problem in a cost-minded industry, we hope, will bear fruit.

One of *Printing Equipment Engineer's* observations is that unless management is willing to foster the idea that the mechanical executive is liaison between management and the worker, it will be futile to continue human relations talk at production and mechanical executive conferences. Unless management goes along with the idea, the mechanical executive's efforts in attempting to humanize the company through his instrumentality will result in a return to a frustrated viewpoint.

Just to illustrate the conditions with which mechanical executives have had to cope in the past, we'll mention one instance which actually occurred. A well known mechanical executive recently stated the first information about his company's scale settlement with a certain union was obtained from the chapel chairman. Imagine a superintendent getting his information through a union representative rather than from management which, through its representative, carried on the negotiations. This is one facet of a situation which exists in many plants that would disappear were management to recognize the mechanical executive at least as its spokesman in relations with employees.

Another unjust criticism which has been directed from time to time at some mechanical executives is that management makes an agreement with one of the printing trades unions. When the contract is signed his company is bound not only by the contract but by the union's laws. It is necessary for the foreman to know as much or more about union law and the contract than the men if he is to comply with the instrument to which the employer has agreed. Some employers have accused their foreman of undue fealty to the union in administering production operations under the terms of the contract. They don't realize that in not discussing the contract terms with their mechanical executives whom they don't consider a part of management they are contributing to the delinquency of the executive.

Anyhow, *Printing Equipment Engineer* is greatly pleased with the new trend in the industry. The mechanical executive, we feel sure, ultimately will have bestowed upon him the recognition which he deserves.

And a word of warning to the mechanical executive: He should commence to prepare himself now so that he will measure up to the stature which management and workers will expect of him. Management and the mechanical executive both have a task of great magnitude ahead of them.

KANSAS MECHANICAL CONFERENCE

attended by about 300 mechanical executives from weekly and daily newspaper and commercial plants

THE first annual meeting of the Kansas Newspaper Mechanical Conference was held at Hotel Kansan, Topeka, Kas., on Saturday and Sunday, October 2 and 3. Approximately 300 mechanical executives, about evenly divided among weekly and daily newspapers and commercial plants, attended.

Vern Williams, Mechanical Supt. of the Topeka Newspaper Printing Co., Inc., was made president for another year. G. M. Harris of the Salina *Journal* was made vice president. Larry Miller, secretary of the Kansas Press Assoc., was elected secretary-treasurer.

Elected as directors for three years were Harry B. Porter, Independence Reporter, and W. A. Blackburn, Herington Advertiser Times. For two-year terms are L. K. Monger, Pratt Union, and Glenn Cole, Salina Journal. One-year terms as directors were given to James A. Coates, Topeka Daily Capital, Earl A. Ferris, Lawrence Journal-World, and Harry Fadke, Consolidated Printing Co., Salina.

The 1949 conference will be held in Topeka.

Saturday Sessions

Albert L. Higgins, president of Kansas Press Assoc., and Henry S. Blake, vice president and general manager of Capper Publications, made the opening addresses to the conference group Saturday morning. W. A. Blackburn, Herington *Advertiser-Times*, presided over a discussion session.

The afternoon meeting, headed by Vice President G. M. Harris, Salina *Journal*, included the Teletypesetter discussion; a motion picture, *Linotype Presents the Blue Streaks*, and a talk on Care and Treatment of Type Metal, by Fred Shaw, metallurgist of Federal Metals.

Discussion topics of the conference included Press and Stereotype, directed by C. R. Tullis, Hutchinson *News-Herald*; Commercial Shops, C. W. Parson, Topeka State Printing Plant; Weekly Papers, L. K. Monger, Pratt *Union*; Machinists, Glenn Cole, Salina *Journal*; and Composing Rooms, James A. Coates, The Topeka *Daily Capital*.

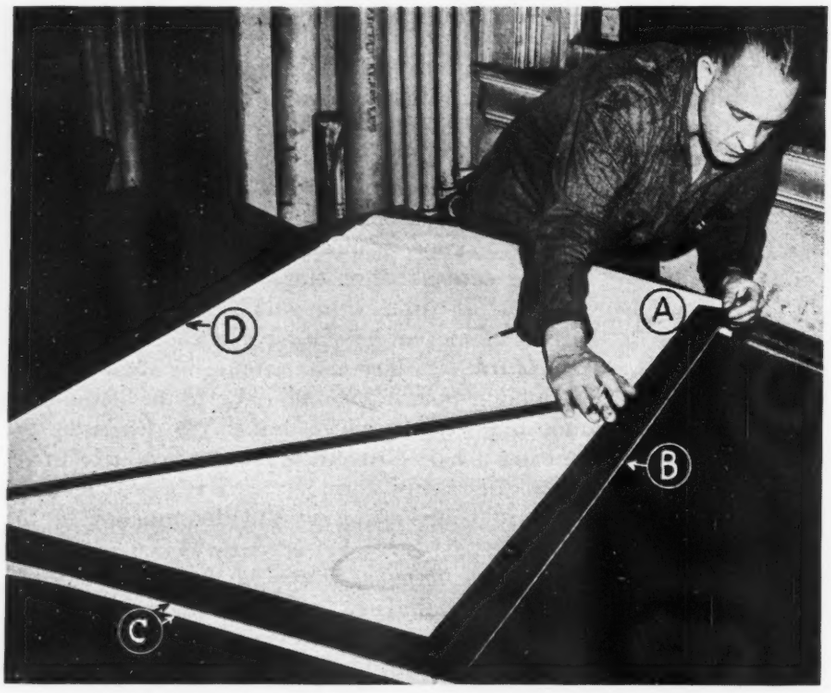
Sunday's Sessions

The group held an all-day meeting Sunday at Hotel Kansan. Program chairman for the morning session was Harry B. Porter. Lowell Ross of the Goss Printing Co., addressed the group, followed by a motion picture *Stepping Ahead With Intertype*. Robert Colomy of the Southworth Machine Co., Portland Me., talked with the men on *Humidity Control and Other Commercial Printing Problems*.

C. R. Tullis of the Hutchinson *News Herald* conducted the afternoon session which included an address by Eddie Gaughan of the New England Newspaper Supply Co. He discussed press work and stereotype problems.

The composing room men made an inspection of the Capper Publications composing room. Problems in maintenance of typesetting machines were explained by representatives of typesetting machine manufacturers and machinists from Kansas newspapers.

After the inspection trip a composing room machinery clinic was headed by Otto Eastman machinist of the Topeka Newspaper Printing Co.



Roy Coates, Pressroom Supt., Grand Rapids (Mich.) *Press*, is shown here employing a specially made steel square to aid him in marking off newspaper press impression cylinder blankets for correct punching of pin holes so that the blankets will not walk or creep along edges *B* and/or *D* after they have been applied to the cylinder. Walking of blanket edges has been the cause of serious printing troubles to newspaper pressmen because in the center of the cylinder where the edges of two blankets abut each other, they tend to pull apart. Narrower newsprint margins, as little as 9/16 in., don't permit much creeping of the blanket off the printing edge of the curved stereo plate. In the accompanying article, Mr. Coates explains use of the square. The square itself is fabricated from 1/8 in. thick steel; both beam and blade are 2½ in. wide; beam is 48 in. long; blade is 36 in. in length; the brace is same thickness steel stock but is 1¼ in. wide. The square was made for Mr. Coates by a Grand Rapids machinist.

Square *Eliminates Impression Cylinder Blanket Walk or Creep on Newspaper Press*

At a number of recent newspaper mechanical conferences, pressroom executives have discussed the difficulty they have been encountering with walking or creeping blankets. The difficulty seems to occur on either two or three-piece combinations without respect to the product of any of the blanket manufacturers. The trouble has become more annoying with the progressive reduction in newsprint margins. The newsprint width reductions, of course, have been caused by the scarcity of newsprint in attempts by newspaper plants to conserve consumption through what seems to be the only way in which to provide stock on which to print a greater number of papers. Then, too, there is the increasing expensiveness of newsprint which must be considered.

Another way in which to explain the effects of creeping or walking blankets is to state that a number of years ago most newsprint rolls were delivered in 68 in. width. At the present time, many plants are receiving 65 in. rolls. Considering that four pages (width of the pages) are printed across this 65 in. stock, the margins on many papers have been reduced to 9/16 in.

Now, to the uninitiated it would seem that a 9/16 in. margin on a newspaper page shouldn't cause any trouble in the pressroom with respect to the type in the left and right edges of the two inside type page plates on the press cylinder failing to print. Pressroom superintendents, however, have been accumulating gray hairs over the trouble.

Newspaper press blankets (also expensive items of equipment) are trussed up on an impression cylinder in pairs. In order to cover the printing area completely across the cylinder, it is necessary to apply a pair of blankets. The blanket edges butt together in the center of the cylinder. With the reels or clamps provided by the manufacturer with which to stretch the blankets taut on the cylinder, the unitiated might think there should be no trouble. In more or less space of time (according to the blanket fabric and the workmanlike manner in which the blankets have been applied to the cylinder) the blankets start separating (that is, creeping or walking) in the center section where they meet or are butted together. Considerable skill is required to apply new blankets properly to a press cylinder. But—with all the skill, pressroom executives still struggle with the problem of walking blankets. It seems to be a common ailment. Blanket fabric has a disposition all its own and doesn't have any respect for the pressman's skill in fitting the two inside edges together on the plate cylinder. So far as known, blanket manufacturers disclaim responsibility for the walking habit.

One pressroom executive who like others has given abnormal blanket behavior a great deal of thought is Roy Coates, Pressroom Supt. of the Grand Rapids (Mich.) *Press*.

Mr. Coates's principal tool for the treatment of the problem of the walking blanket consists of a steel square, measuring 36 in. the length of the blade and 48 in. the length of the beam. This square was made for him by a Grand Rapids machinist. (Incidentally, Mr. Coates has this square checked for trueness once a year.)

On the end of the blanket (*D* in the illustration) near one corner, Mr. Coates makes a pencil mark exactly 5/8 in. from the edge. He then lays the square on the blanket so the blade will coincide with the pencil mark and squares the beam of the square with the lower corner of the blanket indicated at *A* in the illustration. He states he doesn't care where the side or edge of the blanket marked *B* comes. In some cases the white edge of the blanket at *B* may extend outwardly from the square's beam or it may be positioned slightly under the beam out of sight. All this time, the blanket is permitted to lie naturally on the table top as it will without pulling the blanket itself in an attempt to make it line up with the beam edge. He then draws a line with pencil along the top of the blanket at *C*, *5/8 in. from the edge*. Holes for the reel pins are punched along this line.

Mr. Coates states this method of obtaining hole alignment in relationship to the side edge of the blanket may also be used with a three-piece combination. During the three years he has used the square no blankets have walked or crept in the pressroom of the Grand Rapids *Press*.

Loaned to Babcock

Karl Klinger, former Chief Engineer and Technical Director of Koenig & Bauer of Wurzburg, Germany and Carl Ringe, former Chief Engineer of several German manufacturing organizations, including Albert & Co. of Frankenthal, Germany, are visiting Canton as technical advisors to the Babcock Printing Press Corp., engineering staff. The German engineers are loaned to Babcock, through contract with the officials in the occupied zone and are in Canton for a limited stay. The present allowable time of Messrs. Ringe & Klinger's visit is not to exceed six months.

Rotogravure Pressroom Operation

in new Crowell-Collier plant described — Eight new presses emit 480,000 twelve-page multi-color magazine signatures per hour

By ALVIN H. KORN*

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THE discussion in this article will be based on the rotogravure process and its use as it exists in the new magazine printing pressroom of the Crowell-Collier Pub. Co., Springfield, O. In the new building have been installed eight new rotogravure printing presses upon which are printed *Collier's Magazine* and the *Woman's Home Companion*. The building is approx. 289 ft. by 146 ft. The building itself extends to a height of four stories.

We're proud of our new pressroom. Therefore, we'll describe it briefly before getting into a description of the presses and actual printing of the magazines.

There is no fourth floor in the new building, the gravure pressroom taking up the space which normally would be occupied by the third and fourth floors. Occupancy of the third and fourth floor space by the pressroom provides a large, airy room in which to work.

The pressroom is provided both with natural and artificial illumination for clock-around operation. Incandescent lights give general high-bay illumination and fluorescent fixtures attached to strategic points on the presses yield local illumination.

Doubles Gravure Press Capacity

With the installation of the eight rotogravure presses in the new building addition, Crowell-Collier has doubled its gravure press capacity, now operating 20 gravure presses. The new press installation consists of six Cottrell and two Goss presses. Each press consists of seven units and a folder. The presses are arranged to print 3 and 4—that is, with one pass of the paper web through the press, two colors and black will be printed on one side of the web, while three colors and black will be printed on the other side of the web.

The capacity of each of the presses is as follows: The paper web travels through the press at 1200 f.p.m. Each press prints 60,000 twelve-page signatures (either *Collier's* or *Woman's Home Companion*) at 20,000 cyl. rev. per hr. Average simultaneous capacity of the eight presses is 480,000 twelve-page signatures per hour. Each press unwinds, prints and folds 30 full size paper rolls (1T. each) operating three shifts over a 24 hr. period. A 24 hour supply of paper is maintained on the pressroom floor. Incoming rolls are transferred from freight car direct to the pressroom, the balance of the incoming paper being sent to storage in the basement.

Gravure Production Speeds

Printing of magazines by the gravure process has its many problems—a great number of which also exist in the letterpress and offset processes. We feel that in spite of these problems there are advantages in printing large volume magazine editions by the gravure process.

Speed is an important factor in the production of any job. This statement is made particularly with reference to magazine printing as required in our plant. It includes makeready time and actual printing speeds. In our gravure pressroom the entire makeready operation is completed within four hours per press on which, for instance, in the case of one of our publications 60 thousand twelve-page signatures per hour are printed—three colors on one side and four colors on the opposite side of the web once through the press. Largely, the makeready has been taken care of before the cylinder reaches the pressroom. The hours saved by the gravure method is an important item in today's production schedules.

Getting Ready To Print

The accompanying cross-section diagram of a gravure press unit will show to those not acquainted with the process the principal parts of the unit. The design cylinder, the impression and backup rolls, the spray head, the doctor blade assembly, the ink pump and the ink reservoir make up the enclosed unit. The

General View in New Gravure Pressroom in Crowell-Collier Plant, Springfield, O. — The building in which this pressroom is housed consists of basement and three floors, the pressroom floor being as high as two normal floors. This provides a high ceiling which, together with natural and artificial lighting means (localized fluorescent and incandescent for general lighting) and with paint on walls and ceilings make the room a pleasant place in which to work. Floor area is 289 ft. by 146 ft. Eight modern presses (6 Cottrell and 2 Goss) each are 72 ft. long by 18 ft. wide.

One of the presses fully webbed is shown in operation in the center part of this picture. Ducts for exhausting vapor from ink drying hoods to the outside atmosphere can be seen extending lengthwise and above the press. A modern sprinkler system has been installed immediately below the ceiling.

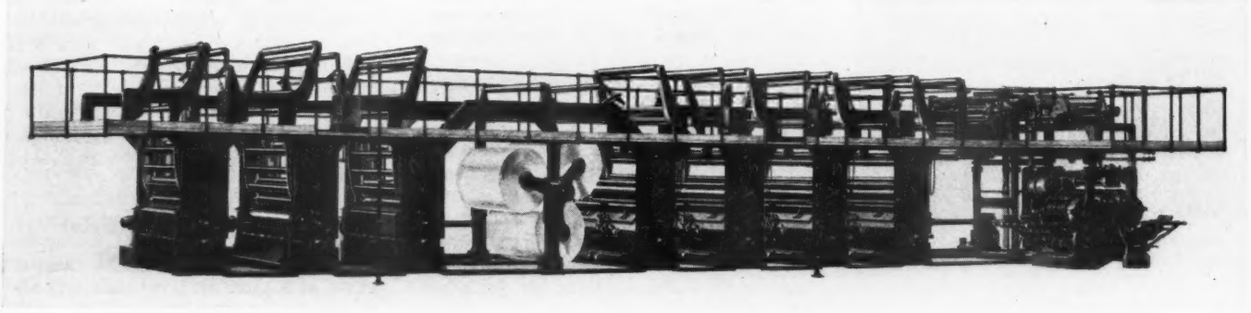
The press control room (not shown) is at right of the picture in a fully glass enclosed room in the balcony.

At right of the picture can be seen trucks loaded with folded magazine signatures which are trundled by the packer boys to waiting elevators which lower trucks automatically to bindery on the floor below.

In the left central part of the picture can be seen the rails for the overhead tram system. By means of traveling hoists, the rails for which enter between the press units, the printing cylinders (weighing approx. 1450 lbs. each) are brought to and removed from the press units. The overhead conveyor rails also are used to transport rolls of paper (weighing approx. 1 T. each) to the press reels.

enclosed unit is essential for high speed production so that the solvent is retained in the ink until it is applied to the web.

The completed cylinder is locked in the unit. The spray head is moved into position. The ink pump motor is started. The ink is pumped from the reservoir or fountain through the spray head onto the cylinder. As the cylinder rotates it is covered with ink. The doctor blade, when lowered onto the cylinder, wipes all ink from the non-printing surface of the cylinder, leaving only the cells that have been etched into the cylinder filled with ink. As has been explained in a previous article in *Printing Equipment Engineer*, the depth and size of the cell determines the color value expected. The excess ink removed from the surface of the cylinder drains back into the reservoir. The wiped surface of the cylinder then passes under



Artist's drawing of one of the Cottrell rotogravure printing presses in plant of Crowell-Collier Pub. Co., Springfield, O. This press consists of seven units and will print two colors and black on one side of the web and three colors ond black on the other side of the web once through the press at a web speed of 1200 ft. per min. Each of these presses in the new pressroom prints 60,000 twelve-page signatures of *Collier's* or *Woman's Home Companion* at 20,000 cyl. rev. per hr. Each press unwinds, prints and folds 30 full size paper rolls (1 T. each) operating three shifts over a 24 hr. period.

the impression roller where the ink is the cell in transferred to the paper through pressure. After each impression, the paper passes through a heating and ventilating hood where a blast of hot air (140 deg. to 200 deg. F.) is directed against the web, releasing the solvent in the ink. This released solvent is then drawn off through ducts and is discharged outside the building.

Of Special Interest To Visitors

Two mechanisms in the gravure printing presses are of special interest to visitors to our plant. These are the doctor blade and the register control.

The doctor blade is fabricated of steel, varying in thickness from 0.004 in. to 0.010 in. (That is, if a thickness of 0.006 in. is used, it is constant in thickness throughout the length of the blade.) This blade is mounted in a substantial holder for rigidity. The blade is ground and honed so the edge is perfectly straight and free from all burrs. When mounted on the press unit it is adjustable so the edge of the blade can be brought into perfect contact with the cylinder. Pneumatic (air) pressure is used to press the edge of the blade against the cylinder. Regardless of the wear on the blade, the pressure is constant, and a uniform wipe of the cylinder is sustained during the run. The wiping blade (in its fixed circumferential position) is reciprocated the length of the cylinder. Etched areas on the cylinder will cause wear on the blade. Margins, which carry no etch, do not cause wear. By the reciprocating movement, wear on the blade is made even. The air pressure required varies from 20 lbs. to 40 lbs., depending upon the ink used, the condition of the blade edge, and the depth of the etching.

As will be seen in the accompanying cross-section diagram, the paper web passes between the printing cylinder and the rubber-covered roll, the rubber serving to press the paper into the etching and produce the printed product. The continuous flexing of the rubber generates considerable heat which is detrimental to the rubber and to the printed result. Therefore, the rubber-covered roll are water-cooled through flexible swivel joints mounted on each end of the rolls.

The backup roll and the rubber-covered impression roll are mounted in a pair of vertically sliding boxes which are raised and lowered by a motorized screw arrangement adapted to bring the rubber-covered roll to the required pressure on the printing cylinder. Once the pressure has been set correctly, the controls maintain constant pressure throughout the run. Push button controls for the printing pressure are located at each unit and also at the folder.

View of one of the Goss rotogravure printing presses in plant of Crowell-Collier Pub. Co., Springfield, O. This press consists of seven units and a folder arranged to print 3 and 4—that is, with one pass of the paper through the press, two colors and black will be printed on one side of the web, while three colors and black will be printed on the other side of the web. Paper web travels through press at 1200 f.p.m. Press prints 60,000 twelve-page signatures (either *Collier's* or *Woman's Home Companion* at 20,000 cyl. rev. per hr. A special former type folder was developed to produce signatures for these publications in place of the standard magazine type jaw folder. The fold in the signature is produced by the former. Signatures are then cut off in the folder and delivered at each side of the folder, the pin holes being located in the bottom of the page rather than at the side.

Ink Drying Hoods

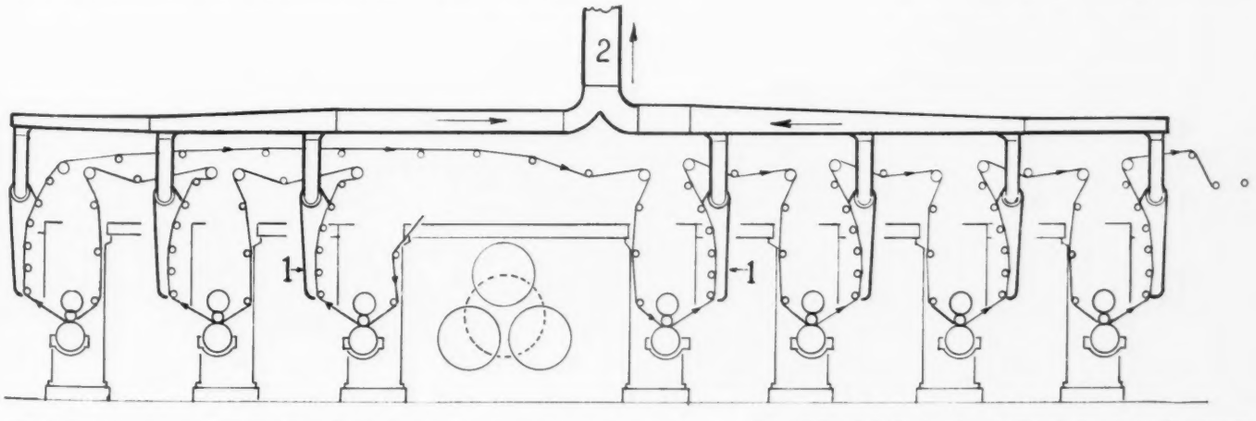
Due to the formulation of rotogravure inks, substantial drying must be done between each printing (impression) so the ink will be all set to take the next impression. This applies to color work with its separate impressions as well as the printing upon the second side of the sheet. Therefore, B. Offen & Co. drying hoods (see accompanying diagram) are provided to dry the ink immediately after each printing.

Each of the press units is provided with a drying hood fitted closely to the paper web. When the freshly printed paper web passes from the printing line through the drying hood (at speeds up to 1200 f.p.m.) air is blown on the web to dry the ink. The air which is exhausted from the surface of the web is partly recirculated and part of it is exhausted through a duct to the outdoors.

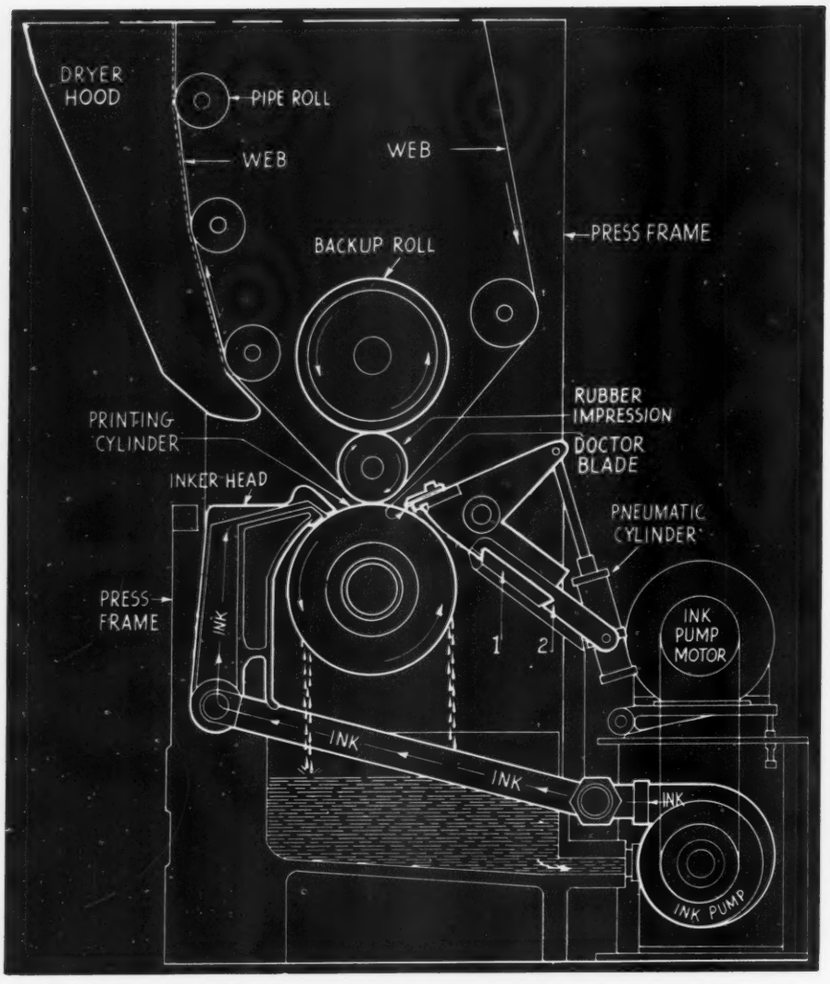
Each unit is equipped with its own heater to maintain the temperature required at each unit.

The exhaust at each printing unit is tied into a main line running lengthwise the press and the air is exhausted outdoors. The press is so arranged that at any future time the solvent in the exhausted air can be passed through a solvent recovery system.

The use of the hoods in conjunction with the rotogravure press permits removal of the fume-laden air and keeps the pressroom in good working condition.



Offen Rotogravure Ink Drying System—This diagram shows arrangement of the Offen ink drying hoods fitted closely to the paper web and connected to a duct extending lengthwise of the press. The volatile vehicle which is evaporated from the ink is exhausted by a fan to the outside atmosphere.



Cottrell Rotogravure Magazine Printing Press Unit shown in diagrammatic cross-section. Parts have been stripped away to show principal functions of press. The paper passes between the design cylinder and the rubber covered impression roll; the rubber covered impression roll is aided in maintaining rigidity of position and impression by the chromium plated backup roll. The continuous flexing of the rubber covering on the impression roll generates considerable heat which is detrimental to the rubber and to the printed result. Therefore, both the rubber-covered roll and the backup roll are water-cooled through flexible swivel joints mounted on each end of the rolls.

Differing from any of the other major printing processes, the rotogravure printing cylinder carries the printing design etched intaglio in its surface. Consequently, the cylinder is sprayed with water-like ink to fill the cells etched below the surface.

As will be seen in the diagram, the ink is caused to be sprayed upon the cylinder as it (the cylinder) revolves. The ink is forced through a piping system by the centrifugal-type pump shown in lower right-hand portion of the diagram and out of the spray head which extends lengthwise the cylinder.

After a partial revolution of the cylinder and immediately before the paper is impressed against the cylinder, the excess ink is wiped from the non-printing areas of the cylinder. It can be seen readily that the spraying of the ink not only fills the depressed printing design but it also covers the non-printing areas of the cylinder.

Removal of the ink from the non-printing surface of the cylinder is accomplished by a doctor blade. The doctor blade extends completely throughout the length of the cylinder. The blade is approx. 0.006 in. thick and is caused to bear against the printing cylinder by a pneumatic cylinder with air pressure control valves arranged so that the air pressure (ranging from 20 lbs. to 40 lbs.) is maintained continuously. At the same time, the doctor blade mounted on frame *2* moves slowly with a reciprocating motion on the dovetailed slide *1* lengthwise of the cylinder. This reciprocating motion lengthens considerably the life both of the cylinder and the doctor blade. After being wiped from the surface of the printing cylinder, the excess ink falls back into the ink supply tank. The tank holds approx. 70 gal. of ink.

Electronic Color Register Control

Circumferential register of the printed design on the paper web is controlled by compensating rollers over which the web passes. By making the web of paper tight or loose, any color or colors already printed can be moved in the desired direction. Lateral register is controlled by a gear arrangement at each unit which moves the cylinder itself. All register is controlled by push button or geared controls from the delivery end of the press. As soon as the form is registered, an electric eye device is timed in and register is then controlled automatically. The device consists of an electric eye scanning head which scans a printed mark on the web as it enters each printing unit. If the mark is out of synchronism with the printing cylinder, it is brought back by a motorized compensator screw adjustment acting to slightly lengthen or shorten the path of the web. The electric eye controls the circumferential register, but control of the lateral register remains manual.

Properties of Gravure Inks

Gravure ink is handled in a different manner than is the case with letterpress or offset inks. The shade of the ink is controlled by pigment and varnish the same as any other ink. However, the drying medium is primarily a solvent. By changing the solvent, drying qualities of the ink can be speeded up or slowed down, the object being to release the solvent from the ink mixture while passing the web through the drying hood, leaving the pigment and varnish in a dry state on the web. At the same time, the ink in the cells must not be allowed to dry, for by so doing the ink would not transfer to the web.

The ink reservoir in a gravure unit will hold 70 gal. of ink. From time to time, it may be necessary to add solvent to the ink fountain in order to maintain the proper viscosity of the ink mixture. Viscosity plus drying speed go hand in hand for the proper printing of the ink.

Press Cruising Speeds

An important factor in gravure printing is the speed of a job once it is under way. The cruising speed of our new gravure presses is 1200 f.p.m. This means an average of 60 thousand twelve-page signatures per hour. These signatures, which are printed three colors on the first impression and four colors on the second impression, are delivered from the press dry, folded, and cut to untrimmed book size.

Cline Automatic Reels and Flying Pasters

In presses of this type, continuous operation is highly desirable. Cline Electric Mfg. Co. automatic reels and flying pasters have been installed. These units maintain continuous high-speed operation by automatically feeding in a new web roll when the one in operation is exhausted. The tail of the expiring roll is cut off and spliced to the new roll at the full operating speed of the press. An automatic tension arrangement is incorporated to maintain web tension during the splicing operation. This is done by means of belts which provide a frictional drag on the surface of the web roll. The frictional drag is increased or decreased as required by a torque motor, governed by a roll floating on the running web.

The Folder

After final printing and drying, the web passes to the folder, where it is slit into three ribbons which are then drawn

(*Continued on Page 48*)

EXECUTIVE ¶s

I. J. Gardner, sr., former mechanical production manager of the Chattanooga (Tenn.) *Times*, passed away in a Chattanooga hospital, Thursday, October 14, at age 84. He was a former Chairman of the executive committee of the SNPA Eastern Div. Newspaper Mechanical Conference. He had also served with distinction on the State Textbook Commission under Governors Roberts and Peay. He was a member of Chattanooga Typographical Union and of the Half Century Club. He started with the *Times* in 1887 under the late Adolph S. Ochs. Five years later at age 28 he was made composing room superintendent, a position he held until 1932, when he was promoted to mechanical production manager. In 1939 (on his 75th birthday) he announced plans to retire at a luncheon given in his honor by the *Times*. It was in his last year of active service that the *Times* won the Ayer trophy for typographical excellence among papers in the circulation class of 10,000 to 50,000. Mr. Gardner was given the major share of the credit for winning the trophy. Three of I. J. Gardner sr.'s sons and five of his grandsons have worked for the *Times*. Three generations of the Gardner family have worked a total of 211 years for the paper. One son, I. J. jr., is at present foreman of the composing room; another son, Frank sr., is chief machinist. A grandson, Frank jr., is an employee in the composing room. Editorializing I. J. Gardner sr. the day following his death, the *Times* stated: "Within any organization that builds toward greatness there are always loyal men who participated in its struggles and shared in its successes. Irvin John Gardner was such a man in the Chattanooga *Times* family."

August N. Eckdahl, of Chemco Photoproducts Co. is back with that organization after an absence of several years. Eckdahl, well known to Midwestern photoengravers, left Chemco early in the war to contribute his service to the war effort. He will work out of the Chicago office and call on photoengraving shops in Wisconsin, Michigan, Indiana and Illinois.

Stuart E. Arnett, Sales Manager of the Printing Machinery Div. of the Electric Boat Co., announces the appointment of Al W. Johnston as Pacific District Manager. A native of California, he graduated from the University of California and the Stanford University Law School.

Al W. Johnston, appointed Pacific District Manager of the Printing Machinery Div., Electric Boat Co.

He has been selling lithographic machinery in several midwest states since 1936. Prior to this time he was assistant superintendent of the State Printing Plant in Sacramento, Calif. Johnston is a member of the Litho Club of St. Louis, Kansas City Club of Printing House Craftsmen and the Sales Executives Club of Kansas City. He replaces Charlie Harwood who has been transferred to the Chicago office as Midwest Manager. Harold W. Gegenheimer, Supervising

Carl O. Siebke, made Chief Design Engineer in an appointment at the Printing Machinery Div. of the Electric Boat Co.

Engineer of the Printing Machinery Div. of the Electric Boat Co., announces appointment of Carl O. Siebke as Chief Design Engineer. He was formerly Chief Engineer of the Rutherford Machinery Div., Sun Chemical Corp., and was associated with the Champlain Corp. as a designer of web-fed gravure and letterpress equipment. Siebke is a graduate of Rutgers University and holds the degree of Bachelor of Science in Mechanical Engineering.

Ralph C. Pearsons, General Manager, George H. Morrill-General Printing Ink Div., Sun Chemical Corp., has announced appointment of John P. Mather as New England District Manager. Mather, a graduate of Massachusetts Institute of Technology, became associated with the Morrill organization in the control laboratory. He served during World War II in the U. S. Army Chemical Warfare Service and held the rank of major at his discharge in 1946. Previous to his new appointment, he was general superintendent of the Norwood, Mass. plant and general plant manager of the Clearing, Ill. plant. He assumes the duties of Edmund J. Shattuck who is retiring from active participation because of ill health but will continue to be associated with Morrill.

Emory W. Worthington has been appointed Vice President and Chief Engineer of the Babcock Printing Press Corp. of Canton, O., according to announcement by President C. Q. Wright. He was formerly Chief Engineer of Champlain Co., Inc., and for many years was associated with Goss Printing Press Co.

Emory W. Worthington, announces President C. Q. Wright, has been made Vice President and Chief Engineer of Babcock Printing Press Corp.

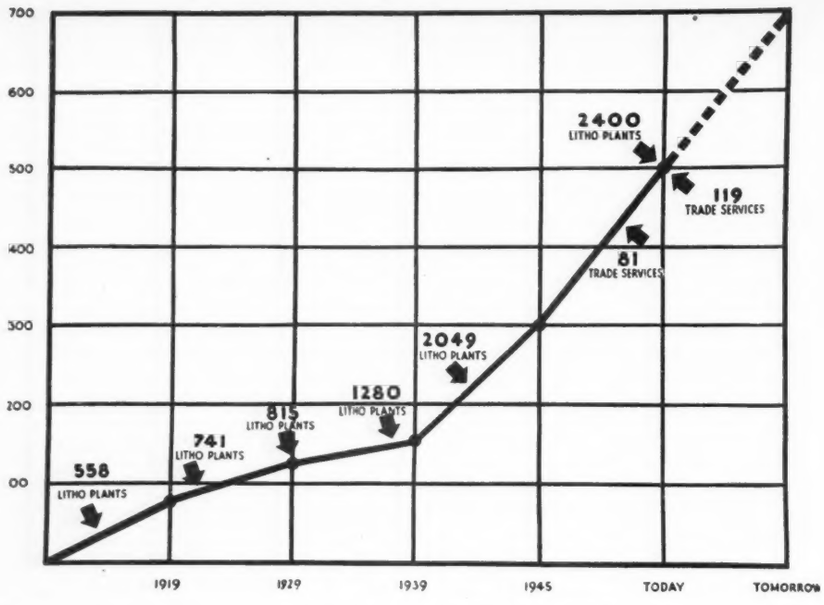
Babcock recently moved to a new factory location in Canton, O., including Main Office, Engineering and Manufacturing Div. Firm is now engaged in production of high speed magazine and rotogravure presses in addition to sheet-fed rotary and flatbed presses.

The appointment of Eugene R. Coate to Sales Manager of printers' supplies for the Goodyear Tire and Rubber Co., was recently announced by H. D. Foster,

Eugene R. Coate, appointed to Sales Manager of printers' supplies for the Goodyear Tire and Rubber Co.

manager of the Mechanical Goods Div. Coate has been with Goodyear since 1936, holding sales posts in Brooklyn, N. Y., Hartford, Conn. and Atlanta, Ga. In 1942 he came to Akron as a member of the production staff of Goodyear Aircraft Corp. He became a field representative for printers' supplies in the west in 1945, and was acting sales manager of the department for the last year. Coate, a native of Lima, O., will continue to make Akron his headquarters.

(Continued on Page 44)



Figures contained in above chart based on statistics compiled by the Bureau of the Census, U. S. Dept. of Commerce, and the *National Lithographer*. Dollar volume is expressed in millions.

Engravers urged to expand offset platemaking

By H. A. PORTER*

**Vice President in Charge of Sales, Harris-Seybold Co. Abstract of address delivered before convention of American Photoengravers Association, Hotel Statler, Cleveland, October 1948.*

AT THE 1931 APEA convention I stated: "If it were possible for the average small printing concern to secure offset and gravure plates through photoengravers, it would bring tremendous development in these fields." There has been considerable development in offset-lithography and gravure, as well as the letterpress process, since then. However, I wonder how great this development might have been if at an earlier date more photoengravers had entered the offset and gravure platemaking field.

In the past, there has been a certain degree of misconception that the larger interests in any phases of the printing and platemaking industry were opposed to one another. During the past several years, some of these misconceptions have been partially dissipated. The Harris-Seybold Co. firmly believes that each printing process has its place in the Graphic Arts. The fact that we have manufactured equipment for all three processes precludes prejudices on our part. We have long range plans for building improved equipment for letterpress and gravure as well as offset. This is a definite indication of how strongly we believe in the future of each process.

In 1931, there were very few lithographic platemaking shops. The intervening years have seen numerous such shops come into being. The greatest increase, however, has been noticed during the past few years, or since the end of the war. For instance, the past year marked a 48% increase in the number of offset platemaking trade shops. There are now slightly more than 119 such shops in operation today. An interesting fact is that the greater percentage of the new offset platemaking trade shops are photoengravers who are capitalizing on the opportunity for successful combination letterpress-offset operation.

Offset-lithographic platemaking is big business. A recent survey, conducted by a widely known research organization, brought to light certain startling statistics. More than $60 million are spent annually for offset-lithographic plates, and that of this 60 million, $15 million worth are plates made in lithographic trade shops. These figures do not include plates of sizes smaller than 15½ in. by 20½ in.

It is simple arithmetic to subtract 15 from 60, and determine that $45 million worth of plates are made by lithographers in their own plants. Many lithographers make their own plates and will continue to do so—for platemaking operations are a recognized source of revenue. However, you can be sure that a high percentage of them are making their own plates simply because there are not suitable facilities within the industry to supply them with the number of plates required. Many lithographers, in addition to making plates in their plants, must utilize two and three trade shops to supply the number of plates required for normal operation. The trend is definitely toward more and more offset platemaking trade shops and it is obvious that the photoengraver has the physical equipment to enter this field. You realize, of course, that trained lithographic technicians will have to be added.

The growth of offset-lithography since the first Harris offset press in 1906 has been just short of phenomenal. From a $39 million volume in 1914 offset-lithography has grown to a present volume conservatively estimated at $500 million today.

Printing Industry of America reported in 1945 that letterpress volume had increased 58% over 1939 while offset-lithography had increased 85%. In other words, lithography is growing more rapidly than the other processes. Of the total printing volume in the nation today, it is estimated that letterpress is responsible for 65% and lithography for 28 or 29%.

The future of offset-lithography is bright. Farsighted individuals, in the industry as well as in allied fields, are gearing operations to keep pace with the accelerated development and acceptance of the offset-lithographic process.

Large manufacturers, as well as Harris-Seybold, have spent considerable time and money on research to determine the degree of expansion in prospect for the lithographic industry. Several companies, whose names long have been synonymous with letterpress, have literally spent millions to enter the lithographic equipment field. The small offset press is well entrenched in the graphic arts. Thousands will be installed in plants during the next 10 years. I wonder how many photoengravers will turn away old customers with new ideas who want them (the photoengravers) to make offset-lithographic plates?

Many owners of letterpress shops have already installed offset equipment to take

(Continued on Page 62)

"More than $60 million are spent annually for offset-lithographic plates. . . . Of this amount $15 million worth of plates are made in lithographic trade shops," asserted H. A. Porter before APEA convention in Cleveland. He urged photoengravers to enter more extensively into the making of offset plates. He warned them, however, that trained lithographic technicians will have to be added.

EQUIPMENT & SUPPLIES

Sta-Hi MasteRouter

THE Sta-Hi MasteRouter Stereotype Curved Plate Routing Machine is described by Sta-Hi Corporation as a self-contained "router room." The routing machine is completely enclosed to eliminate flying metal chips, the chips dropping into a hopper connected with a removable metal drawer at the lower front part of the machine.

Sponsor states that a new type of routing head gives powerful, high speed, precision operation of the routing tool. The latter is operated by a foot pedal controlling an airplane type stainless steel cable running through the pulleys. A feature of the machine is a power drive on the traverse feed, automatically engaged through a clutch mechanism, and which can be used instead of manual operation for rapid stripping of stereotype plates.

A protective window of shatterproof glass slides into and raises upwardly at the front of the machine. Overhead fluorescent tubes provide illumination of the work without shadows or glare. A section of the front panel of the machine, directly below the window, is hinged and can be dropped down to give ample room for mounting plates on the routing cylinder or removing them from the machine. The machine can be equipped with a cylinder to accommodate two different sizes of plates, or with a device for bevelling the matching edges of double-page plates.

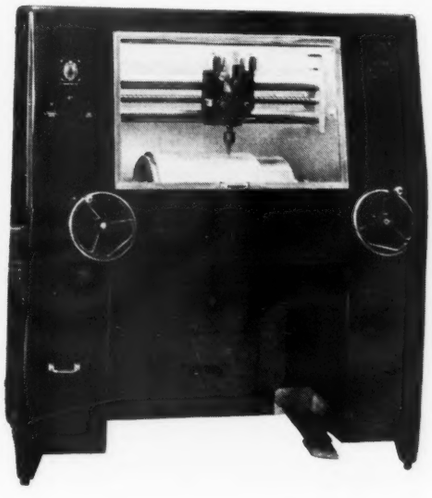
Sound of the main drive motor, located at the left end of the machine, and the small fractional horsepower motor at the right end is muffled by the enclosing end panels. These end panels are held in place by new type fasteners and can easily be removed when necessary for maintenance or adjustment. When the safety glass window at the front of the machine is closed it further dampens machine operating noise.

The handwheel shown at the left of the machine in the illustration operates the cylinder rotation. The handwheel at the right of the machine operates the traverse action of the routing head which moves either to the right or left as the wheel is turned in either direction.

The machine is so designed that the operator can either sit down or stand up to operate it.

The router is completely enclosed in a sheet metal cabinet 4 ft. 4 in. wide, 1 ft. 8 in. deep and 5 ft. 1 in. height.

Further information may be obtained from Sta-Hi Corp. direct or through *Printing Equipment Engineer.*



View of Sta-Hi's Master Router for routing curved newspaper stereotype plates. Flying chips are directed into a hopper leading into a chip receptacle. Shatterproof glass window and section of front panel provide easy mounting and removal of plates. Independent motor provides traverse stripping of the plate.

Erases Grease and Dirt

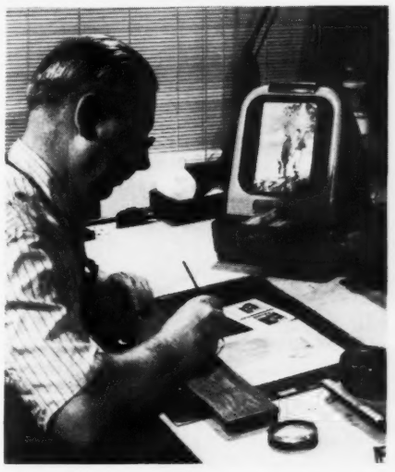
EMBUR, INC. states Emburage Hand-Clean, a hand-cleaning lotion erases ink and grease from the hands in a few seconds after application, without the necessity of walking back and forth to washstands. Each bottle is good for from 100 to 200 "washes". Arrangements are now being made for distribution to the printing trade. For information, write Embur, Inc., in care of *Printing Equipment Engineer.*

Slide Viewer Aids Engraver

A SLIDE viewer and projection system for miniature photographic transparencies which may prove of considerable assistance to the Graphic Arts worker has just been announced by the Eastern Kodak Co. The Kodaslide Table Viewer, projects enlarged images of 2 in. by 2 in. slides on a rear projection screen built into the viewer itself. It can be used in a fully lighted room.

The new unit can be used to rapidly scan a group of 35mm or Kodak Bantam Camera transparencies and select the most suitable for reproduction or to check the quality of color plates "in the works" against the transparencies themselves.

The viewer is portable and occupies less than 10 in. by 12 in. desk or table space. It can be set up on any desk, table, or counter and left in readiness for instant use. It holds 75 cardboard slides or 30 double-glass slides, which may be intermixed in use, and projects on its screen a brilliant detailed image enlarged approximately five times from slides made from 35mm or Kodak Bantam Camera transparencies. The screen size is 7½ in. by 7½ in.



The 2 in. by 2 in. photographic slide projection device is called the Kodaslide Table Viewer. It occupies less than 10 in. by 12 in. desk or table space. Incorporated is a slide projector, automatic slide changer, and viewing screen in one unit. The viewer will hold 75 cardboard slides or 30 glass slides. Glass and cardboard slides may be intermixed in use. Manufacturer states this slide projection system can be used in a fully lighted room without shading the screen or reducing room illumination.

Eastman Kodak Co. announces that an attractive carrying case will be manufactured as an accessory.

Honig Rule Cutter

THE Honig Rule Cutter is of the bench type. It is designed for cutting rules and slugs, strip materials, Ludlow slugs, and vertical rules for use in connection with the Universal Mono-Tabular Broach. Manufacturer states the device cuts cleanly. The blade strikes the rule in such a way that it will not bend rule face.

A strong spring serves two purposes: (1) It holds the upper knife blade tight against the shear blade to prevent looseness between blades; (2) It provides means for lifting the lever and blade upwardly.

A point system is provided on the gauge stop. The machine can be used to cut up to 100 picas by nonpareils and points. The point block is adjustable to precision cuts.

Further information will be furnished by addressing your request to *Printing Equipment Engineer.*

The Fairchild Lithotype

A TYPEWRITER - LIKE electrically-driven machine which is used to type matter for letterpress or offset reproduction from standard printers' type has been announced by Fairchild Camera and Instrument Corp. The machine, according to announcement, is now in limited production. It is also announced that the machine may be used to type matter on paper or thin metal offset plates for direct image work. Operating speed of the machine is 25 words per min.

The unique features of the Linotype (as contrasted with other machines upon which similar work can be executed) is that the printing elements—standard printers' type—are mounted in the periphery of a 4½ in. diam. magnesium wheel. The letters are removably mounted in two rows—one for capitals and one for lower case characters. Thickness of wheel is dependent upon point size of type used. Any Monotype type face from 6 pt. to 24 pt., caps and lower case may be mounted in the magnesium wheel. To change type face, the operator switches wheels—time required is about 15 sec. Any length line can te typed up to 72 twelve-pt. ems with any combination of type faces. Any combination of four gears can be specified for the set size (*i.e.*, 6 on 7, 8 on 10, 10 on 10, etc.) to suit the user's particular style.

A one-time carbon ribbon is used. It is supplied in drums of varying lengths. Ribbon is 0.0015 in. thick.

In the Lithotype, the form is first typed, using the space bar to space the words the minimum distance apart. After proofreading, the form is retyped to secure equi-distant line length, by employing justifying keys for spacing the words. A scale indicates to the operator which keys to use.

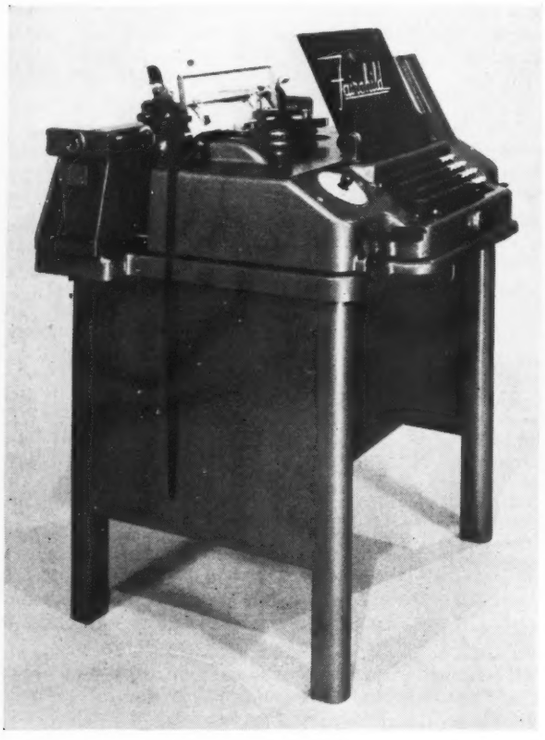
In the Lithotype, the actual Monotype system of spacing is used. An em (square of the body) is divided into 18 units. Individual characters vary from 5 units such as the period, to the full 18 units, such as a capital M or W. As the type character is struck by the copy paper, a space selector for that particular width character moves the carriage the proper distance to permit typing the next character on the copy sheet in its correct spaced relationship to the preceding character.

Through manipulating the keyboard keys, the printing impression is made by bringing the carriage which carries the sheet upon which the copy is being typed against the type. The printing impression is secured through adjustable toggle action. Printing pressure may be varied by adjusting a dial. The platen itself is a nylon-faced flat bar. Manufacturer states that because of its resilient nature, there is no indention of the work sheet, hence the type is not damaged.

Keyboard is of the standard typewriter variety but incorporating the additional spacing keys. The keybuttons are feather-touch. A tripping mechanism makes the actual impression of the letter against the paper when a key is depressed.

Manufacturer enumerates features as follows: (1) Combines roman and italics in same operation; (2) roman and bold face in same operation; (3) 15 sec. change of face or size; (4) accurate spacing between lines 6 pt. to 12 pt.; (5) accurate justification between words; (6) accurate proportional spacing characters; (7) full lines justified at both ends; (8) sharp print for good reproduction; (9) controlled impression; (10) prints on paper or metal without embossing on the back.

Further information may be secured from Fairchild Camera and Instrument Corp. by addressing your request to *Printing Equipment Engineer*.



View of Fairchild Lithotype, a typewriter-like machine which prints from Monotype type characters, range from 6 pt. up to 24 pt. capitals and lower case. Any length line can be typed up to 72 twelve-pt. ems with any combination of type faces. Machine weighs approx. 400 lbs. for the 11½ in. carriage and takes up 27 in. by 32 in. floor space. The 16 in. carriage machine requires 27 in. by 40 in. floor space. Stands top 28 in. from floor.

Miehle Parts Catalogue

A CATALOGUE of V-50 Miehle Vertical Press repair parts has been issued by the Miehle Printing Press & Mfg. Co. This is the first of a series of repair parts catalogues now in preparation which will eventually cover the entire line of Miehle presses.

The V-50 Miehle Vertical parts catalogue folds into an 11 in. by 8½ in. cover to fit the standard size filing cabinets. The pages open out as two-page spreads 17 in. by 11 in. size, this being done to show parts and assemblies as large as possible for easy identification.

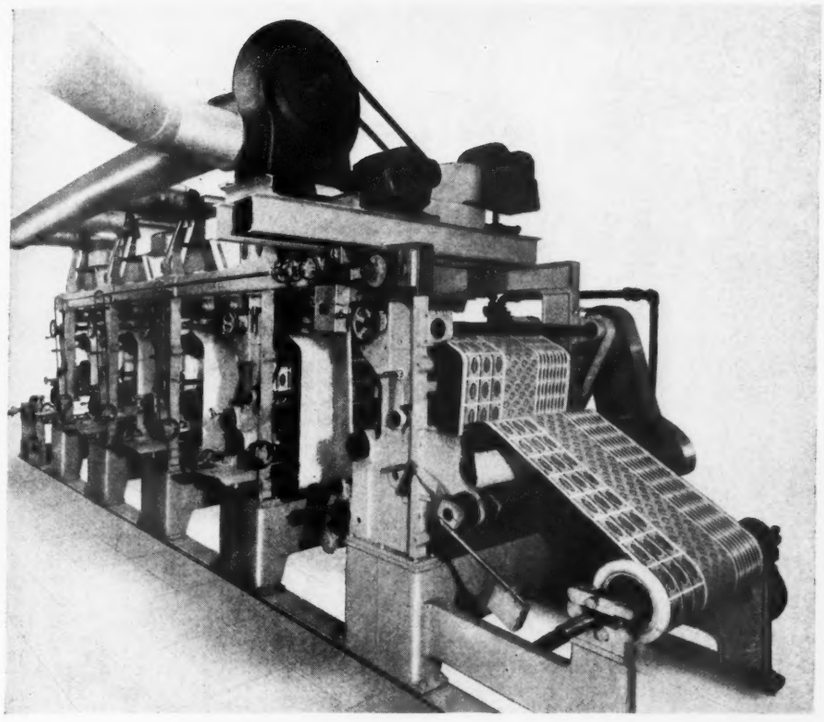
Parts are shown by assemblies or sub-assemblies—feeder, transfer table, side guide and cylinder, ink fountain, and so on. Each two-page spread shows the photo reproduction of a sub-assembly in the upper part, with parts identified by index numbers. The list of parts shown in the assembly illustration appears immediately below the illustration.

When ordering parts it is essential that the part number, the name and description, also the serial number of the press for which the parts are ordered, be given. This eliminates possibility of misunderstanding or misinterpretation of the order, and facilitates shipment of the parts ordered.

All parts of the press are listed and described including commercial parts which can be purchased at a local hardware store or machinists' supply house, these latter being indicated by an asterisk preceding the part numbers. At the back of the catalogue is a complete list of parts arranged in numerical order, with commercial parts being listed separately.

Humidification Facts

THE Abbeon Supply Co. has made a contribution to the Printing and Paper Trades in the form of a recently issued folder on Humidification. In the folder is explained what is meant by 100 per cent humidity and relative humidity and how air will steal moisture from such things as stock on hand or in the process of manufacture. This robbery will continue, it is stated, until equilibrium is obtained. For example, air at 70 deg. contains 8 gr. of moisture; if outside air of 32 deg. is brought in (which can only hold 2 gr. per cubic ft.) and it is heated to 70 deg., moisture must be added or the product will dry out (releasing its moisture into the air). Daily average mill conditions for the various seasons of the year, as reported by the U. S. Weather Bureau, are listed. The importance of maintaining humidity in the pressroom to eliminate static and curled stock is stressed to insure quality and efficiency. Copies of this folder may be obtained by writing the Abbeon Supply Co. direct, or *Printing Equipment Engineer* will gladly pass along your request.



View of a multicolor web-fed rotogravure printing press in process of manufacture by Klingrose Div. of American Typefounders, Inc. Klingrose plant is in Brooklyn, N. Y. President Williams of ATF recently announced acquisition of Klingrose assets by ATF, Inc.

ATF Purchases Klingrose

EDWARD G. WILLIAMS, President of American Type Founders, Inc., announced purchase of the assets of the Klingrose Machine Corp., Brooklyn, N. Y., which will be operated as the Klingrose Gravure Div. of American Type Founders, Inc., for the manufacture of multicolor web-fed rotogravure presses.

The Klingrose Corporation started building gravure presses in 1936. It has been producing heavy-duty and lighter gravure presses for paper mills, converters, label and packaging material manufacturers, and others. Presses have been built in units of from one to eight colors, equipped with rotary sheeters with jogger pile delivery, with applicators for gluing, gumming, and plastic coating, and with unwind and rewind accessories.

As the purchase of the Klingrose business includes the entire plant and personnel, the Klingrose Gravure Div. of American Type Founders, Inc., starts as a complete and functioning organization.

ATF announces it has also acquired from the Kimberly-Clark Corp., Neenah, Wis., exclusive rights to manufacture and sell, under its own name, the Henderson Cylinder Etching Equipment, and the rights to license others in the use of the Henderson Intaglio Halftone Process.

ATF states its new technique will bring rotogravure closer to becoming a standardized production process and places rotogravure within the grasp of all commercial printers who have occasion or opportunity to serve a demand for mass production of printing.

Further details about ATF-Klingrose Presses and ATF Cylinder Etching Equipment can be obtained from American Type Founders Sales Corp.

ATF's President, Edward G. Williams announces acquisition by ATF, Inc. of plant and assets of Klingrose Machine Corp., Brooklyn.

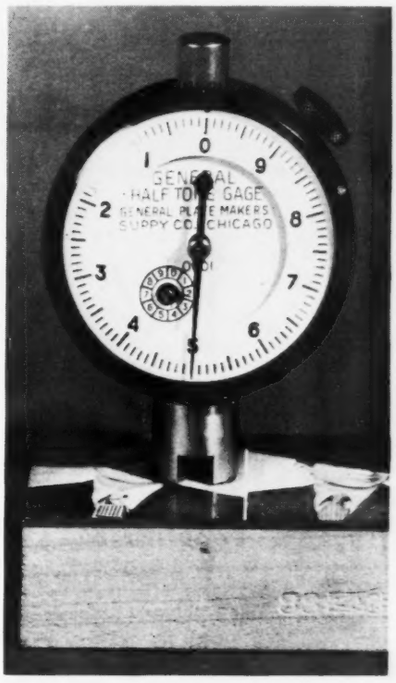
Type and Hand-I-Font Catalogs

LOS ANGELES Type and Rule Co. has issued two catalogs pertaining to type faces and to Hand-I-Fonts for distribution in the Graphic Arts industry. The first of these consists of 36 pages, 3⅞ in. by 9 in. and in it are listed the type fonts available in hard foundry metal, together with point sizes and prices; rule and border faces are also shown. The other catalog shows ornaments in geometric, benday and unit patterns put in in Hand-I-Font form; ornaments for special occasions are also shown; catalog consists of 40 pages, 4⅜ in. by 10¼ in. Either catalog, or both, may be obtained by sending your request to *Printing Equipment Engineer*.

General Halftone Gauge

GENERAL Plate Makers Supply Co.'s Halftone Gauge is calibrated to measure halftone etching depths by thousandths and by ten thousandths of an inch up to 0.010 in. depth. Actually, 0.0001 depth can be measured since the 0.001 in. divisions on the dial are graduated into 0.0001 in. divisions. The inner or "reverse vernier" dial shows depth measurements up to 0.065 in.

The instrument stands 3 in. high from top of the guard to pedestal base which is ⅝ in. diam. Measured across the dial, case is 2 3/16 o.d. Equipped with jewelled



bearings. White dial bears black graduations. Gauge finished in black with polished steel pedestal. Case supplied is in natural wood finish, approx. 4¾ in. wide by 3⅞ in. deep by 1⅜ in. high; lid is brass hinged and hooked.

Extra needle supplied in recess in the case. Needles easily removed and replaced. Halftone etching depths for copper and zinc contained in chart fastened to recess in case lid.

Infra-Matic Drier Bulletin

THE Infra-Matic Drier which employs infra-red radiant heat for pre-shrinking stereotype matrices is described and illustrated in a bulletin recently issued by Infra-Matic Products Co. Combined with the infra-red heat feature is an electronic timer that can be adjusted to 1–120th sec. on a 60 cy. circuit. To operate the Drier, the mat is inserted into the open jaws of the removable sliding rack and pushed against the guide. The door is then closed and the pre-shrinking starts. After the required time elapses the door opens automatically and the mat is delivered at front of sliding rack and ready to be taken out and packed. The lamps are also shut off.

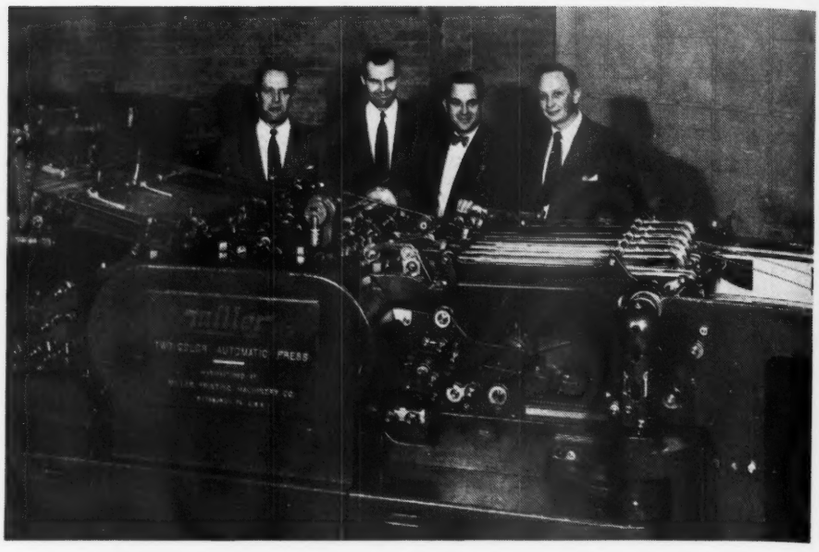
Two-Color Automatic Press

RECENTLY, President Gordon Monthomery of the Miller Printing Machinery Co. announced shipment of the first production model of the new Miller 21 in. by 28 in. Two-Color Automatic Cylinder Letterpress. He stated present commitments will absorb the first six months' production of this new press. However, orders will be accepted for delivery during the second quarter of 1949.

In this press are featured a one-piece box type side and way frame construction with integral bed rails, a rotary ink mill distribution with long-stroke vibrator and a form roller pickup mechanism. A swing-away feeder and delivery permits access to each bed and cylinder.

In operating position, the press measures 12 ft. 7¼ in. by 5 ft. 4½ in. Manufacturer claims operating speeds up to 4000 sheets (8000 color impressions) per hr.

Max. sheet size is 21 in. by 28 in. with minimum sheet size of 8½ in. by 11 in. Max. size form in press bed is 19¼ in. by 28 in. Max. size form in chase is 19¼ in. by 26 in. Thicknesses of stock that can be handled are 0.0025 in. up to 0.015 in.



One of the first production models of the Miller 21 in. by 28 in. Two-Color Automatic Printing Presses. Left to right behind the press are: A. E. Searle, Vice President and Sales Manager of the Miller Printing Machinery Co.; R. B. Tullis, Vice President and Plant Manager; Gordon Montgomery, President; and A. A. Saul, Vice President in Charge of Engineering.

Overall dimensions are 7 ft. 9½ in. by 17 ft. 6 in. Further information may be obtained by addressing your request to *Printing Equipment Engineer*.

Photoengravers *hold liberally attended convention — New developments discussed; exhibits plentiful; AAAA-NAMP Joint Committee Report*

By J. S. MERTLE, FRPS, FPSA

THE 52nd Annual Convention of the American Photoengravers Association was held on October 7 to 9 at Hotel Statler in Cleveland, the fifth time that city has played host to the Association since its inception on May 17, 1897.

The total registration was 950 persons, of which 268 were women. Some 294 member firms of the Association were registered, and 480 representatives of these firms were present. There also was registration by 25 engraving concerns who are not members of the Association, these concerns represented by 32 persons.

The technical and equipment personnel of the industry likewise saw large attendance. Registration of 73 different supply firms was noted, with a total of 234 representatives.

Geographically considered, the convention visitors represented 31 states and 132 cities of this country, besides 23 foreign visitors—19 from Canada, 2 from England and 1 each from Denmark and France.

For years it has been the aim of the Association to conduct its Conventions on an educational basis, to which end numerous speakers as well as exhibitors are invited to tell their stories and show their wares. The Cleveland convention was no exception. Some 28 different speakers appeared on the rostrum, besides a panel or group of leading production executives in the Graphic Arts, the latter giving their views on what is needed to improve the appearance of advertising in magazines and publications.

The lectures delivered by the speakers covered a wide range of topics, including copy preparation; fluorescent lamps; process lenses; diaphragm controls; photographic masking; highlight halftone methods; halftone screens; intaglio halftone; darkroom sinks and modernization of darkrooms; copper colorimeters; copper etching; magnesium bases; proof presses; instruction manuals; newspaper, letterpress and multicolor printing; offset-lithography and other subjects.

Concerning exhibits, 44 concerns occupied 124 booths, wherein were displayed nearly every item, material and apparatus employed in photoengraving.

One of the feature exhibits was the first appearance of the textbook, *Modern Photoengraving*, compiled by Louis Flader and J. S. Mertle, and published under their partnership by Modern Photoengraving Publishers. The work will shortly be made available to readers of *Printing Equipment Engineer*.

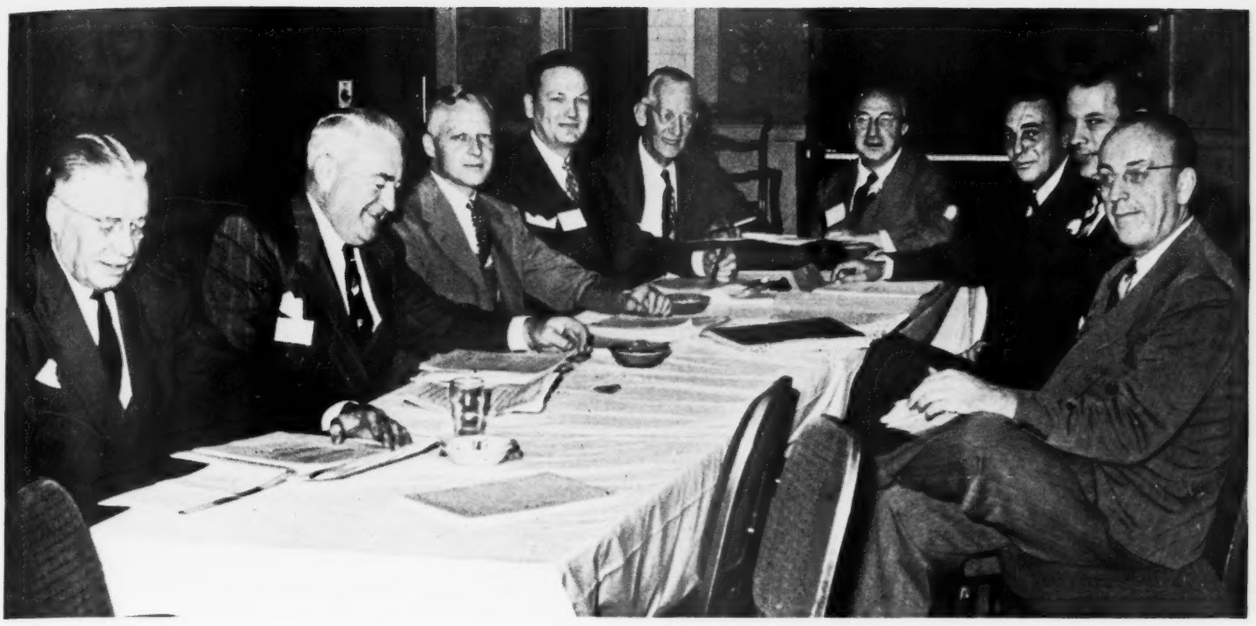
A departure from past routine of Association conventions was that no business sessions were held on Friday afternoon (October 8), thereby permitting convention visitors to give their full attention to exhibits. This move was made because some Association members have complained that a full schedule of business sessions did not provide enough time for thorough inspection of exhibits. It is believed that the new practice will be carried out in future conventions.

Officers Elected

After serving as President of the Association from 1945 to 1948, New York, Joseph Rosenberg, declined renomination.

Officers elected are as follows: President, W. K. James, Philadelphia; First Vice President, D. H. Murnik, Oakland, Calif.; Second Vice President, Peter Schotanus, Detroit; Secretary-Treasurer, Clarence G. Rohrich, Akron, O.; Frank J. Schreiber, Executive Secretary. The executive committee also includes Joseph Rosenberg, New York; Everett Bierman, Charlotte, N. C.; Richard Danz, St. Louis; R. C. Walker, Tulsa, and A. P. Regitz, Chicago. Louis Flader of Chicago is consultant.

The 1949 convention will be held in San Francisco.



APEA Panel of Experts at 52nd Annual Convention — Held in Cleveland at the Hotel Statler on October 8. (*Clockwise*):Arch Crawford, President, Nat'l. Assoc. of Magazine Publishers, Inc., New York; E. Thomas McBreen, Director of Mechanical Production, J. Walter Thompson Co., Chicago; Mack Goode, American Assoc. of Advertising Agencies, New York; Glen Boylan, Vice President and Director of Mfg., Meredith Pub. Co., Des Moines; Ernest Donohue, Production Manager, Batten, Barton, Durstine & Osborn, New York; Thomas J. Carnese, Vice President, Ted Bates, Inc., New York; Lewis W. Trayser, Vice President and Director of Mfg., The Curtis Publishing Co., Philadelphia; Frank E. Church, Time, Inc., New York; P. L. Ruston, Business Manager, Conde Nast Publications, Inc., New York.

Panel and Engraving Executives Discuss Recommended Standard Specifications for Four-Color Advertising Engravings

AT THE Friday morning (October 8) session of the American Photoengravers Association convention, a most informative and valuable session pertaining to Report No. 2 by the AAAA and NAMP Joint Committee on Magazine Advertising Reproduction was held. The session considered *Improving the Physical Presentation of Advertising in Magazines*. The Joint Committee's Report was devoted to recommended standard specifications for four-color advertising engravings in magazine letterpress wet printing.

The Joint Committee members in panel style answered prepared questions covering various points included in recommendations in the report.

The discussion was introduced by E. Thomas McBreen, Director of Mechanical Production, J. Walter Thompson Co., Chicago; the panel leader was Glen Boylan, Vice President and Director of Manufacturing, the Meredith Publishing Co., Des Moines, Ia. Other panel members to be heard, all representing the joint committee, were Frank E. Church of Time, Inc., New York; P. L. Ruston, Business Manager, Conde Nast Publications, Inc., New York; Lewis W. Trayser, Vice President and Director of Manufacturing, The Curtis Publishing Co., Philadelphia; Arch Crawford, President, National Association of Newspaper Publishers, Inc., New York; Ernest Donohue, Production Manager, Batten, Barton, Durstine & Osborn, New York; Mack Goode, American Association of Advertising Agencies, New York; and Thomas J. Carnese, Vice President, Ted Bates, Inc., New York.

The committee's recommendations and work in behalf of "improving the physical presentation of advertising in magazines" was well received by the photoengravers. At a business session of the American Photoengravers Association on Saturday, the desire of the engravers to cooperate with the agency men and magazine publishers and any other buyer groups devoted to such a worthwhile purpose was expressed in a resolution which instructed the secretary to advise these groups that members of APEA stand ready to aid them at all times.

Successful Exhibits at APEA Convention

THE 1948 World Series extravaganza found famed celebrities of the entertainment and sports world gracing the halls of Hotel Statler in Cleveland during October 7 to 9 inclusive. However, an attraction of great significance to the Graphic Arts world occurred concurrently. It was the 52nd Annual APEA Convention. It brought photoengravers, platemakers, photographers, equipment makers, and suppliers to an exhibit of late photomechanical equipment and supplies. Good printing predominated in the numerous bulletins, pamphlets, and other literature distributed by each exhibitor. Photoengraving equipment manufacturers and suppliers are to be commended for liberal use of printed matter in promoting their products for use in an industry of which they are a vital component. Items of good-will such as carnations, pencils, book matches, bottles of glue, and key holders to mention a few, passed into many visitors' hands through the courtesy of manufacturers and distributors. A brief resume of each display is as follows:

Joseph Gelb Co.

The Joseph Gelb Co. display was headed personally by Joseph Gelb. A vacuum printing frame was featured. Mr. Gelb has developed a tubular gas vacuum hi-intensity printing lamp which he claims will print four times faster than a double arc lamp. The power consumption is 1800 w. A self-pressurized blanket is another feature of the frame.

Kemart Corporation

Examples of art work and commercial printing pieces of various customers using the Kemart process were being shown by Frank P. Adams, President of the

Kemart Corporation. The use of Kemart materials for reproduction of color work was featured to show how full tonal scale reproductions may be accomplished by the artist and platemaker.

Consolidated Photo Engravers Equipment Co.

Benjamin Sugarman, President of Consolidated Photo Engravers Equipment Co. headed that company's exhibit which included cameras, block trimmer, printing frames, hydraulic beveler, and a router imported from Denmark. A 17 in. by 21 in. dark room camera, 7 ft. in length, was the center of interest. This camera has an enlargement of three times and a reduction of five times. Mr. Sugarman mentioned that the block trimmer was flown in from Chicago for the convention.

American Type Founders

Heading the American Type Founders group was Fred Hacker, Vice President, assisted by W. Thompson, Technical Expert. A 24 in. by 24 in. all-metal ATF Process Camera was shown to delegates and visitors. An electro-pneumatic shutter control with timer accompanied the camera which Mr. Thompson said could be mounted inside or outside of the darkroom. One of the features of the camera is a diaphragm control attached to the bayonet-type lensmount, making it unnecessary to use lengthy mathematical calculations to determine the lens opening.

Rogers Isinglass and Glue Co.

The 75-year old New England firm of Rogers Isinglass and Glue Co. was represented at the exhibit in a group headed by Mrs. H. B. R. Kenyon, Treasurer, to display company's current line of photoengraving glue. A spokesman for the company said the glue has fast drying qualities and would quickly burn in so the temper of the engraving metal is not destroyed. It is packaged in a blue bottle to keep the light out.

Eastman Kodak Co.

A delegation headed by A. G. Clair, Head of the Graphic Arts Studio, represented Eastman Kodak Co.'s colorful display. Revolving shelves enabled the visitor to see various Kodak products manufactured for the Graphic Arts. These included equipment, plates, film, papers, and chemicals. Of much interest to the delegates was a Kodak Lens Assembly containing a built-in diaphram control, a coated highly color corrected lens, and built-in shutter and filter holders. The new Kodaslide table viewer with an automatic changer and focuser for 2 in. by 2 in. color shots brought forth much comment. The main objective of the Kodak group was to enlighten the delegates on color-separation plates.

Philip A. Hunt Co.

At the Philip A. Hunt Co. display, J. E. Cline, Sales Representative, was showing company's line of chemicals used by platemakers and camera men. Among these were the Graph-O-Lith and Strip Film Developers with samples of negatives developed in each accompanying the product. Included with the chemicals were samples of zinc etchings and copper plates etched with powders handled by the Hunt Co.

Toronto Type Foundry Co.

Toronto Type Foundry Co., Ltd. with D. L. Eaton, Special Representative, in charge showed the Micro Photoengraving Screens to interested delegates. Developed by D. Swales of Toronto, the screen is provided with a sealer which he claims will not break in at the edges; this device prevents the screen from changing.

Mr. Eaton had a 65 and a 133 line screen on display with negatives and plates made from them.

Printing Arts Research Laboratories, Inc.

Printing Arts Research Laboratories, Inc., showed the Fluorographic Process for highlighting halftones in a display in charge of Walter Marx, Jr., President. The process consists of the artist substituting a solvent for water to use as a thinner in making wash drawings. Examples of wash drawings using this process and their reproduction could be viewed in the display.

Imperial Type Metal Co.

The Imperial Type Metal Co. contingent was in charge of Clarence Seaman, Vice President, who spoke with delegates at the neon light garnished display. Samples of Imperial Zinc and Magnesium Plates comprised the exhibit. Mechanical lead pencils were presented to those who stopped by as a token of Imperial's good will.

Mallinckrodt Chemical Works

A helpful portfolio of interesting pamphlets explaining the Mallickrodt Chemical Works products was given to visitors at the display in charge of Charles E. Cosby, Divisional Sales Manager assisted by Jack Kelt. Etching powders, cold top enamels, prepared developers and fixers appeared in this exhibit to attract those who are associated with platemaking and photography. Mr. Cosby mentioned that booklets concerning these chemicals would be sent upon request.

(*Continued on Page 62*)

Informal Shots Taken at Cleveland 52nd Annual APEA Convention, Hotel Statler, October 7, 8, 9

1.—Arch Dixon, Supt. of Engraving, The Oklahoma Publishing Co. discussed direct newspaper printing from photoengraved zinc halftone plates.

2.—(left to right): J. S. Mertle and Louis Flader, Co-authors of *Modern Photoengraving*.

3.—(left to right): L. A. Trivision, Secy., Central Photo-Engravers Assoc.; H. A. Porter, Vice-President, Harris-Seybold Co., Cleveland, make themselves useful in distributing AAAA and NAMP Joint Com. report on Recommended Standard Specifications for Four-Color Advertising Engravings in Magazine Letterpress Wet Printing.

4.—(left to right): Joe Eherman, President, Ehrman Engraving Co., Cleveland; Ozzie DeWitt, Sales Representative, Douthitt Corporation, Detroit; A. C. Fritz, Superintendent, Ft. Wayne Engraving Co., Ft. Wayne, Ind.

5.—(left to right): H. M. Crenshaw, Vice President, Southwestern Photo-Engraving Co.; Arch Dixon, Supt. of Engraving, The Oklahoma Publishing Co.; T. J. Baker, President, Park Engraving Co.; H. L. Green, Vice President and Manager, Wilson Engraving Co., Dallas; Bill Murphree, President, Southwestern Photo-Engravers Assoc.; J. H. Webb, President, Southwestern Engraving Co., Dallas; R. C. Walker, President, South western Engraving Co., Tulsa.

6.—(left to right): C. G. Rohrich, Secy.-Treas., APEA; E. Bierman, Executive Com., Charlotte (N. C.) Engraving Co.; Glen D. Boylan, Vice President & Director of Mfg., Meredith Publishing Co.; Fred Hacker, Vice President, American Type Founders.

7.—Front Row (left to right): R. Bogdan, Natl. Service Manager, Vandercook and Sons, Inc.; H. M. Brophy, President, Brophy Engraving; O. Duensing, Sales Manager, Vandercook and Sons, Inc.; Back Row (left to right): Gus Zeese, Sales, Vandercook and Sons, Inc.; R. H. Sandvik, Eastern Manager, Vandercook and Sons, Inc.

8.—(left to right): C. T. Williamson, Supt. of Engraving, Boston *Post;* F. R. Lear, Sr., President, Industrial Engraving Co. and Engravers Research Com. of PIA; J. F. Lear, Supt. of Production, Industrial Engraving Co.

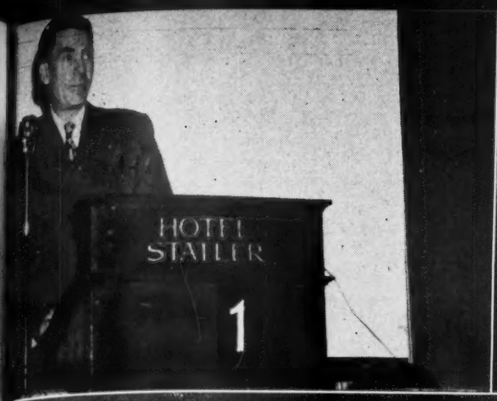
9.—(left to right): R. H. Stuber, Owner, Chestnut St. Engraving Co.; William Spaulding, Supt. of Engraving, Knickerbocker *News;* R. Perry, Sales, Eastern Graphic Arts, New York.

10.—(left to right): Jack Kelt, Eastern Manager, Mallinckrodt Chemical Works, New York; F. K. Lawson, Secy-Treas., Capital Engraving Co.; F. H. Miller, President, Onondaga Photo-Engraving Co., Syracuse, N. Y.

11.—(left to right): George N. Voorhees, Advertiser Publishing Co., Ltd., Honolulu, Hawaii; C. C. Means, Manager, Graphic Arts Association of Michigan.

12.—Mr. and Mrs. Joseph S. Mertle.

13.—(left to right): Herbert Hitch, Sales Manager, Charlotte (N. C.) Engraving Co.; Norman Wrigley, President, Wrigley Co.; T. L. Cooper, Manager, Southern Engraving Co., Atlanta, Ga.



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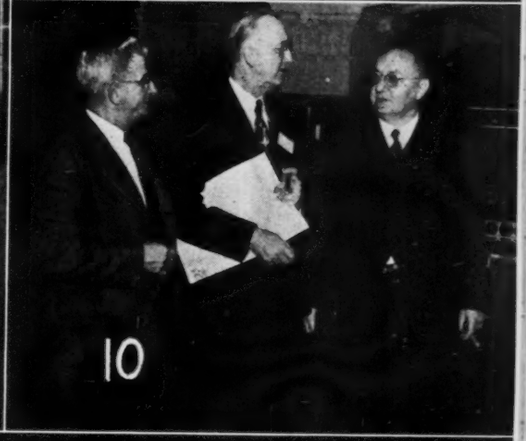
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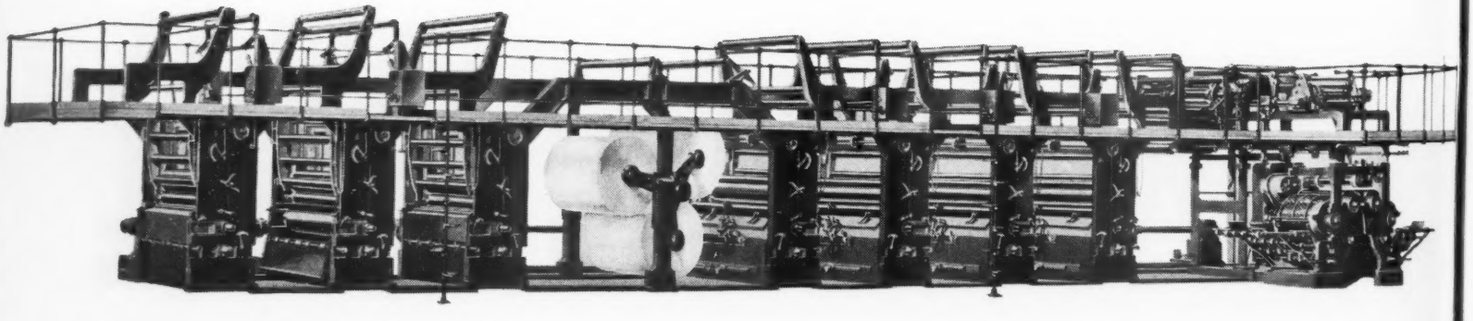
New Giant Marks Milestone in



C. B. COTTRELL & SONS CO.

Westerly, Rhode Island

New York: 25 East 26th Street • Claybourn Division: 3713 N. Humboldt Ave., Milwaukee, Wis.

Chicago Daily News Bldg., 400 W. Madison St. • Smyth-Horne, Ltd., 13 Bedford Row, London W.C. 1, Eng.

Every time the hour hand circles the dial, this great press turns out sixty thousand signatures, printed black and two colors on one side of the web—black and three colors on the other.

in Gravure History

This production is maintained over a three shift, 24 hour period. Each of the hungry units in the line-up consumes thirty full sized (one ton) paper rolls in the twenty-four hour day.

This is truly gravure production on a scale not previously approached... and whether the product to be printed is magazines or newspaper supplements, there is no sacrifice of that fine quality that distinguishes Cottrell color printing.

This contribution to new production records and maintained fine color quality has been made possible by years of constant Cottrell experimentation and experience.

Cottrell

Executive ¶s

(Continued from Page 33)

Thos. P. Mahoney, recently Production Manager for American Greeting Publishers, Cleveland, is now Production Executive for American Color Process Co., Cleveland. His firm will produce color copy and offset plates for all types of greeting cards.

J. W. Hassman, has been appointed sales representative for the Dayco Roller Division of Dayton Rubber Company, Dayton, Ohio, according to an announcement recently by N. H. Neilson,

Dayco Roller Div. announces the appointment of J. W. Hassman to sales representative.

Sales Manager, Dayco Roller Div. His territory will include Ohio, Indiana, Kentucky, Tennessee and West Virginia, with headquarters in Dayton. Hassman, who has been associated with Dayton Rubber since 1939, started with roller production work in the factory, and served in final inspection and order expediting departments. His service with the Company has been continuous except for a four year period during the war which he spent in the Army, first with the Engineers, and later in the Ordnance Department.

Edward Rinehart, president of Pittsburgh White Metal Co., Inc., celebrated 50 continuous years with the Company on October 1 by going about his usual active day's work. Rinehart became associated with the Company in Pittsburgh on October 1, 1898, when it had been established for 13 years. He established the New York plant in 1901 and became president of the Company in 1925. Hale and hearty at 79, he looks forward to continued active participation in business affairs as he starts his second 50 years.

M. J. Hoover, Eastern General Manager of the Sigmund Ullman and Eagle Printing Ink Divisions of Sun Chemical Corp., tannounces the appointment of C. A. Aloia as Assistant General Manager in the East. Mr. Aloia has been Chief Chemist in the Eastern area for those divisions, and will continue in that capacity in addition to his new duties.

E. L. Newhouse, Jr., President of Federated Metals Div., American Smelting and Refining Co., announces appointment of A. M. Callis to the newly created post of General Sales Manager. In the same announcement came notice of the

A. M. Callis, appointed to newly created post of General Sales Manager of Federated Metals Div., American Smelting and Refining Co.

transfer of J. W. Kelin to Sales Manager of the Chicago territory and Paul H. Jackson to Sales Manager of the St. Louis area. Both Kelin and Jackson move to their new posts from St. Louis and

Paul H. Jackson, transferred to Sales Manager of the St. Louis area of Federated Metals Div., American Smelting and Refining Co.

Seattle respectively. Callis' appointment brings him from the Chicago territory where he served as Sales Manager. In his 28 years with Federated, he has been District Manager of the Portland (Ore.) branch, Assistant Manager of the Pittsburgh plant and Los Angeles Plant Manager. He leaves the Chicago territory after more than three years in that capacity. Kelin has held the St. Louis Sales Manager's post since 1944. He has been a member of the National Non-Ferrous Round Table Committee and

J. W. Kelin, Sales Manager of Federated Metals Div., American Smelting and Refining Co.

Secretary-Treasurer of the American Foundrymen's Association's St. Louis chapter for the past seven years. Jackson, a native of the Midwest, started with the company's sales force in 1939 and was made District Sales Manager at Seattle in 1943.

Roy W. Prince has joined the American Newspaper Publishers Association as head of the mechanical research laboratory at Easton, Pa. Mr. Prince is spending some time at the headquarters office in New York, N. Y. before going to Easton to take charge of the laboratory and to handle all field testing. A graduate of William and Mary College at Williamsburg, Va., with a B.S. in mathematics and physics, Mr. Prince later was a student at the Massachusetts Institute of Technology where he was given his electrical engineering degree. He spent one year in practical research at Bartol Research Foundation which is associated with the Franklin Institute. In 1940-41 he was research assistant on the staff at Massachusetts Institute of Technology. During the war period he was associated with the National Defense Research Committee, working with the research laboratory at MIT under contract for the government. Mr. Prince left the Bell Telephone laboratories where he was engaged in research work to join the ANPA.

Chet Bloome has been added to the sales staff of Los Angeles Type and Rule Co. He will work with Sales Manager Bob Jaeke in the Los Angeles area. Bloome has been identified with the Graphic Arts industry in the West and mid-West for the past nine years.

The Miller Printing Machinery Co. has announced the appointment of Frank W. Smith as Manager of its San Francisco Branch. Formerly Vice President and Sales Manager of the Harry W. Brintnall Co., Smith returns to the Graphic Arts Industry after a brief absence. He will be in charge of sales and service for northern California and the Pacific Northwest. The Miller Co. also announces the assignment of Harold C. Lembke to the Los Angeles area where he will also be in charge of sales and service. Lembke has been transferred to the west coast from the company's Chicago office.

7 GOOD REASONS FOR LINOTYPE SUPERIORITY!

MICRO-THERM METAL POT *for positive temperature control and fine slugs.*

UNIVERSAL KNIFE BLOCK *assures individual precision trimming of slugs.*

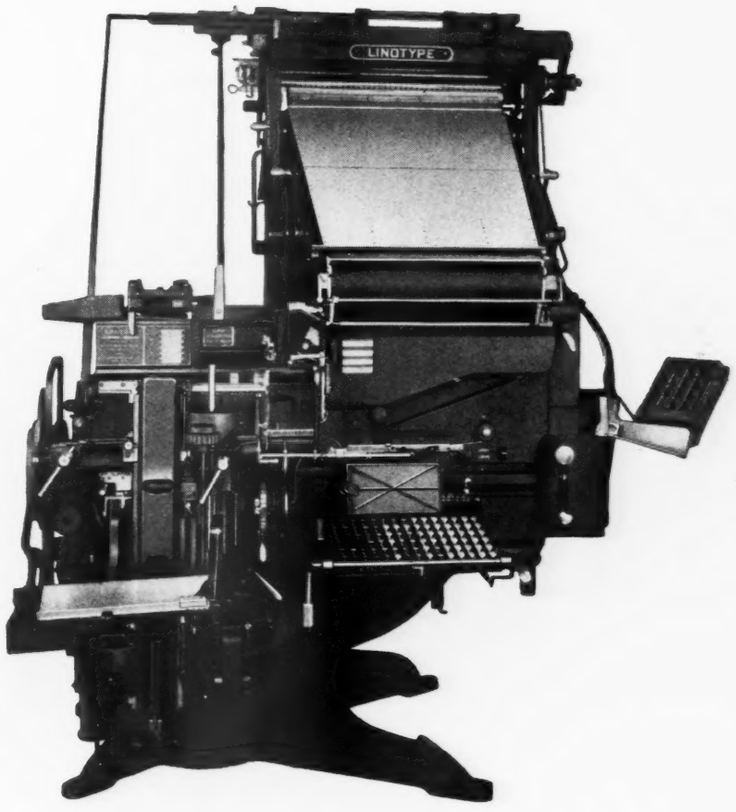
ONE-TURN SHIFT *for quick, easy magazine shifting.*

QUICK-CHANGE LINERS *speed production because of simplicity.*

INBUILT VERTICAL LIFT *eliminates slips and strains.*

SWINGING KEYBOARD *simplifies and speeds important maintenance.*

LINOTYPE



Why is Linotype the most-used composing machine in the world? Six of the hundreds of good reasons are shown here . . . six standard features that have won acclaim in composing rooms everywhere! The seventh is Linotype development and engineering, based on your needs, present and future. It's the real reason behind every production advantage you enjoy with the Linotype.

Each of the features shown here, for example, provides the best possible solution to a problem of operation. Collectively, they make for a better quality of production, greater efficiency, and lower operating costs.

You get more for your composing machine dollar in a Linotype because it's designed to meet your specific requirements.

MERGENTHALER LINOTYPE COMPANY
29 Ryerson Street, Brooklyn 5, New York

Set in Linotype Erbar and Spartan

Beautiful is the word for *After Fifty Years*, the 112 page, 10½ in. by 13⅝ in. hard-bound book published by International Paper Co. in commemoration of company's fiftieth anniversary. Book printed by letterpress, gravure and offset-lith with considerable color work.

On September 16, International Paper Co. held a preview of the anniversary book in the galleries of Associated American Artists, New York.

At left is Wm. A. Hanway, Secretary, International Paper Co., and at right is Boris Artzybasheff, Artist, looking at original drawing for end papers in the book.

BOOKS

RECEIVED

Notable Book

THE increasing use of the three principal printing processes in combination—all three or any two of them is brought forcibly to mind when viewing *After Fifty Years*. This book is published by International Paper Co. to commemorate the company's golden anniversary. Even though considerable financial outlay is involved in publication of the book *Printing Equipment Engineer* wants to call to the attention of its readers the happy combination of letterpress, offset and gravure employed in printing the book. Each process has been utilized to secure maximum printed result.

The book was published in an edition of 105,000 copies for distribution in the United States, and 10,000 copies in French are being distributed in Canada to employees. The content represents a de luxe pictorial and textual account of the operations of the company including present activities. It is easily read—there's nothing tiresome about it. The eye movement from text to pictures and vice versa is effortless. We don't think a higher compliment could be paid to any book.

In *After Fifty Years*, letterpress was used for all text pages and for all captions. Sheet-fed gravure was used for all photographs. Offset-lith was used for a number of full color maps sprinkled through the book. The large color map on the end papers of the book was printed in four color sheet-fed gravure and by three of the letterpress printing process. The medallion on the front cover of the hard-bound book was printed by gravure in four colors with gold stamping.

The book itself measures 10½ in. by 13⅝ in. and consists of 112 pages. The ample paper area, of course, lends charm to the book and permits designer latitude to secure maximum eye appeal.

International Paper Co. tells us that the paper, Ticonderoga Offset was used for the text pages and in a heavier weight for the end papers.

The text and most of the smaller title lines were set in the Monotype cutting of Baskerville.

Readers of *Printing Equipment Engineer* will be fascinated when they learn that five different types of letterpress presses were used. One-color and three-color sheet-fed gravure presses were used for reproducing the photographs and certain of the color work. Two-color and four-color offset presses were used.

Total number of impressions in producing the book was over 9 million. The following quantities of stock were used: Over 7 million sq. in. of imitation gold; 1½ million sheets of Ticonderoga Offset, 29 in. by 43 in. 70 lb. basis for the text, and 100 lb. basis for end papers and medallion.

Technical Notes

The following technical notes, supplied by International Paper Co., will interest our readers:

1. Because gravure ink is known to be abhorrent to binding paste, it was necessary to step-off or "short" at the fold the printing areas of pages on which the tip-in was pasted, to afford an area of unprinted paper on which to paste.

2. During the production of the book, it was found necessary to devise a special close-measurement gauge broken down into picas and leads which permitted precise measuring in lineup and register. This was found useful in all three divisions of the presswork: letterpress, offset, and gravure.

3. The form made up of tips and wraparounds was so imposed that the most delicate register went to the gripper and guide.

4. In order to insure exact reproduction in creating the charts, actual sections of logs and branches from Northern and Southern trees were sent to the artists, and specimens were studied at the Botanical Gardens in New York, N. Y.

5. Retouching of photographs was done on the gravure plates as well as on the prints. These photographs reproduced by sheet-fed gravure are in many instances superior in pictorial quality to the originals.

6. Bearer material, or dead metal, was used in the forms around even the folios, or page numbers, in order to keep the reproduction from "heavying up" when casting the Vinylite molds for the electrotype plates.

7. Hairline register can be held in a big offset form because the offset plate is of one plane and has no air pockets to throw off the register, as in the instance of letterpress, and so it was possible to print the offset in eight colors in a 16-page form.

8. All text electrotypes were Vinylite molds, steel face, and finishing was put in on every plate by two very fine engravers.

9. In cases where there was not enough variation in sizes and weights of Baskerville, over-inking and under-inking was resorted to in order to get proper levels of importance in the two colors—as in the red and black titles used on the full-page photos of Messrs. Cullen, Hinman, and Weaver, where the red was deliberately over-inked and over-impressed and the black under-inked and under-impressed.

Wipe out weather problems

● Forget the thermometer and barometer by equipping your presses with Daycos, the rollers that always run true *regardless* of the weather! You save time and money because Daycos are always ready to go—require no "seasonal changes". Daycos maintain true diameter and smooth, velvety surface winter and summer, in dampness and in drought. No chipping or cracking, no absorption of ink pigments or resulting swelling with high and low spots. And speed runs? They're right down the Dayco alley! Get the satisfaction and savings in time and money that Daycos offer you . . . outperforming ordinary rollers at every turn. they often *last four times longer!* Write for the facts: *Dayton Rubber, Dayton, O.*

ROLLERS FOR THE PRINTING INDUSTRY

dayco by **Dayton Rubber**

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Rotogravure Pressroom Operation

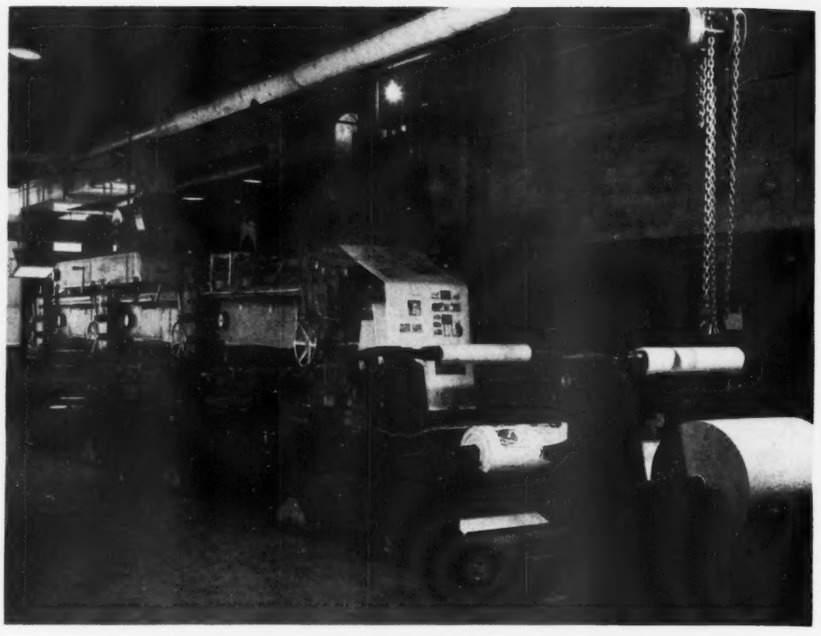
(Continued from Page 32)

over "air-cushioned" turning bars, turning the ribbons at right angles and superimposing them over each other. The function of the air in the bars is to "lubricate" the web as it slides over the bars, and eliminate smutting of the ink. The three superimposed ribbons are then brought down over an air-cushioned former, which produces a continuous longitudinal fold.

Below the former, the folded signatures are severed from the ribbons by a pair of serrated cutting cylinders and are dropped upon the slowly traveling conveyor belts of the deliveries by a pair of "slow-down" gripper cylinders. The stacked signatures are removed from the conveyor by a packer boy who places them in a truck for transport to an elevator which delivers truck and signatures to the bindery on the second floor.

Press Is Oiltight

The entire press is completely oiltight, all gearing runs in oil and all bearings are anti-friction. The drives consist of both Cline-Westinghouse and General Electric Co.'s motors. The drive is a two-motor a.c. 125 h.p. equipment, driving the press through V belts.



View of Miller 30 in. Rotogravure Proofing Press in plant of Crowell-Collier Pub. Co., Springfield, O. This press is comprised of four color printing units and is used for pulling proofs of advertisements prior to publication. Thus it will be seen that Crowell-Collier submits advance proofs of advertisements. A number of advertisements, according to size, can be etched into each proofing cylinder. All proofs are pulled from a roll.

The proofs are pulled from the 30 in. cylinder primarily to see whether or not color separations (positives) need touching up. If, for example, at the first proofing, extensive corrections on the positives are necessary, those corrections are made in the positives from which the 30 in. cylinders have been produced. The original proofing cylinder for each of the colors needing correction is stripped of its copper shell and is replated with copper. Then new lays are put on other 30 in. cylinders as necessary, which are then proofed on the 30 in. press. Comparison between the first and second proofings is made. If more corrections are necessary, the same procedure again is followed. If the corrections are OK, then proofs or progressives are pulled from the 30 in. cylinder and are sent to the advertiser.

If the advertising proof is satisfactory to the advertiser, the color corrected Dultgen positives are then printed down upon and etched in 72 in. press-production cylinders. The 30 in. cylinders which were used for proofing purposes are stripped of their copper shells and are plated with a new copper coat for use in preparing new cylinders for proving other advertisements.

View of Geo. F. Motter's Sons' Rotogravure Proofing Press in plant of the Crowell-Collier Pub. Co., Springfield, O. This four-color press is used for proofing production cylinders for the purpose of making corrections prior to going into production in the main pressroom. Corrections, as in photo-engraving, may consist of local re-etching a certain area on a color cylinder or it might consist of a platemaker burnishing a localized area (which, in the case of rotogravure consists of making shallow the ink cells to lighten the print). All proofs are pulled from a roll.

Cylinder Transport

The printing cylinders carrying the copper etchings are 13.6077 in. dia. 72 in. long over the body, and 101 in. long overall, weighing approximately 1450 lbs. It is necessary, at the start and finish of each run, to transport them between the press and the preparatory department for removal of the old copper shell and replating and etching with new subjects. For this purpose, a system of Cleveland Tramrail overhead conveyor rails with traveling hoists is provided, the rails entering the presses between the units. The press units are provided with convenient means to remove the cylinders; the normally sealed fountain is supplied with a hinged section which can be swung down to allow the cylinder to be rolled out of the unit on tracks, after the cylinder bearing caps have been opened. The cylinder is then lifted from the tracks by the overhead hoist and carried from the press on the overhead rails, after which it is lowered to a specially built roller bearing truck with supporting saddles for transportation to the cylinder replating room.

CLINE-WESTINGHOUSE

EXPLOSION TESTED ELECTRICAL EQUIPMENT

For All Types of

ROTOGRAVURE PRESSES

★ ★ ★

COORDINATED APPARATUS FOR A. C. OR D. C.; WITH MAGNETIC AND ELECTRONIC CONTROL—

Includes MAIN PRESS DRIVES, INK DRYERS, INK PUMPS, CYLINDER RAISING & LOWERING EQUIPMENT, COLOR REGISTERING EQUIPMENT, PAPER BREAK DETECTORS, REELS—TENSIONS, FULL SPEED AUTOMATIC PASTERS

CLINE ELECTRIC MANUFACTURING CO.

Main Office: 400 West Madison St., Chicago 6, Illinois

Western Office
410 Bush Street
San Francisco 8, Calif.

CLINE SYSTEM — QUALITY NAME SERVICE FAME — CLINE ELECTRIC MFG. CO. CHICAGO — CLINE WESTINGHOUSE

Eastern Office
220 East 42nd St.
New York 17, New York

Illinois Newspaper Mechanical Conference

THE 1948 meeting of the Illinois Newspaper Mechanical Conference was held on Saturday and Sunday, September 25 and 26 at the Faust Hotel, Rockford, Ill. The Sunday morning session was welcomed by Barney Thompson, Editor of the Rockford *Register-Republic* and *Morning Star*. Howard N. King, Typographic Counselor of Intertype Corp., made two addresses. One address was entitled *Blackboards* and the other *The Newspaper of Tomorrow*. Archer Albin, Chief Engineer of Mergenthaler Linotype Co., spoke upon *Linotype Developments*.

At the group meetings on Sunday afternoon, the following served as chairmen: Composing Room, John Orlebeke; Stereotype and Pressroom, C. O. Layfield; Small Newspaper Group, Edward Raymond; Photoengravers, Vincent Currise; Machinists, Clifford Entler.

On Saturday evening, September 25, the Supply Men sponsored a social gathering. Ralph Moore of Intertype Corporation was chairman.

The following officers were elected: President, John Orlebeke, Danville (Ill.) *Commercial-News*; Vice President, Sid Scott, Decatur (Ill.) Newspapers, Inc.; Secretary-Treasurer, Wilbur Augspurger, Peoria (Ill.) Newspapers, Inc. Serving on the Board of Directors are: Earl Anderson, Immediate Past President, Rockford (Ill.) Consolidated Newspapers, Inc.; A. M. Massengale, Peoria (Ill.) Newspapers, Inc.; Edward Raymond, DeKalb (Ill.) *Chronicle*; Clarence Snethen, Waukegan (Ill.) *News-Sun*; Clifford Entler, Decatur (Ill.) *Herald-Review*.

Hall Gallien, formerly superintendent of the pressroom and stereotype departments of the Clarksburg (W.Va.) Pub. Co., has become associated with the William B. Edmondson Co. Gallien will represent the Philadelphia company in the southeastern part of the United States. He will call on commercial and newspaper plants in his native West Virginia and adjacent states.

Conference Dates (*with organization names and principal officers*)

American Photo-Engravers Association — 1949 convention to be held in San Francisco, date and meeting place to be announced later. Frank J. Schreiber, Commissioner, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—Palmer House, Chicago, Monday, Tuesday and Wednesday, June 6, 7 and 8, 1949. Edwin H. Evers, Production Manager, St. Louis *Globe-Democrat*, Chairman of the Committee. Walter E. Wines, Manager, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

Great Lakes Newspaper Mechanical Conference—Gibson Hotel, Cincinnati, January 16, 17, 18, 1949. President C. M. Kirk, Stereotype Supt., Detroit *News*; Secretary Al P. Oberg, Flint (Mich.) *Journal*.

Illinois Newspaper Mechanical Conference—1949 conference to be held in Danville, Ill., dates to be announced later. President, John Orlebeke, Danville (Ill.) *Commercial-News;* Secretary-Treasurer, Wilbur Augspurger, Peoria (Ill.) Newspapers, Inc.

International Association of Printing House Craftsmen—1949 Convention to be held in San Francisco, Palace Hotel, September 4, 5, 6, 7, 1949. President, Gradie Oakes, Process Color Plate Co., 522 So. Clinton St., Chicago 7. Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Typographic Composition Association—1949 Convention to be held at Hotel Statler, Boston, Mass., September 22, 23 and 24. Frederick H. Lutz, President, Brockton, Mass.; Frank M. Sherman, Executive Secretary, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference— 1949 conference will be held in Mason City, Ia. Hotel and dates to be announced later. President, Ken I. Waughtal, Kayenay Engraving Co., Mason City, Ia.; Secretary, Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald*.

Kansas Newspaper Mechanical Conference — 1949 meeting, dates to be announced later. President Vern Williams, Mechanical Supt., Topeka Newspaper Printing Co., Topeka, Kas.

Lithographers National Association— W. Floyd Maxwell, Executive Director, 420 Lexington Ave., New York 17, N. Y.

Missouri Newspaper Mechanical Conference — Hotel Conner, Joplin, Mo., in 1949, exact dates to be announced later. President, Paul S. Ginn, Press Foreman, Sedalia (Mo.) *Democrat-Capital;* Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index*.

National Association of Litho Clubs — Washington, D. C., April 29-30, 1949. President, Albert Tucker, Sauls Lithograph Co., Washington, D. C.; Secretary William J. Stevens, 1776 Broadway, New York 19, N. Y.

National Association of Photo Lithographers — 1949 convention will be held at Hotel Pennsylvania, New York, N. Y., October 19, 20, 21 and 22. Executive Vice President, Walter E. Soderstrom. 317 West 45th St., New York 19, N. Y.; Executive Secretary, William J. Stevens, 317 West 45th St., New York 19, N. Y.

National Graphic Arts Education Association — John G. Henderson, President; Fred J. Hartman, Educational Director, 719 Fifteenth St., N. W., Washington 5, D. C.

National Graphic Arts Exposition—International Amphitheatre, Chicago, September 24 to October 7, 1950. National Graphic Arts Exposition, Inc., A. E. Giegengack, President. Fred W. Hoch, Secretary, 461 Eighth Ave., New York 1, N. Y. During the period, September 24 to October 7, 1950, a number of Graphic Arts associations will hold their annual conventions as follows: Intl. Assoc. of Printing House Craftsmen, Hotel Stevens, Sept. 10, 11, 12 and 13, 1950; Intl. Typographic Composition Assoc., Sheraton Hotel, Sept. 14, 15 and 16; Printing Industry of America, Palmer House, Sept. 17, 18, 19 and 20, 1950; and the National Assoc. of Photo-Lithographers.

National Printing Equipment Association, Inc. — James E. Bennet, Secretary, 140 Nassau St., New York 7, N. Y.

New England Mechanical Conference — President, Wm. H. Porter, Mech. Supt., New Haven (Conn.) *Register*. Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day*.

Northwest Mechanical Conference — Hotel Radisson, Minneapolis, Minn., February 12, 13, 14, 1949. President, Chas. R. McGuire, Mechanical Supt., Minneapolis (Minn.) *Star* and *Tribune;* Secretary-Treasurer, Vernon G. Eck, 3725 Forth-eighth Ave., So., Minneapolis 6, Minn.

Pacific Mechanical Conference — Roosevelt Hotel, Hollywood, Calif., May 20, 21, 22, 1949. President, Harold Winn, Hollywood *Citizen-News;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles, *Daily News*.

Pacific Society of Printing House Craftsmen — Blair Lord, Secretary-Treasurer, 3650 Fairmount Blvd., Riverside, Calif.

PNPA-NJPA Joint Mechanical Conference — Penn Harris Hotel, Harrisburg, Pa., April 1 and 2, 1949. Edward O. Davies, Mechanical Supt., Harrisburg (Pa.) *Patriot and Evening News*, Chairman of the PNPA Mechanical Committee is in charge of the arrangements. Thus the states of Pennsylvania and New Jersey will be represented by one conference; executives from Delaware and Maryland (which states have no conference) are also invited to participate in the joint meeting in Harrisburg.

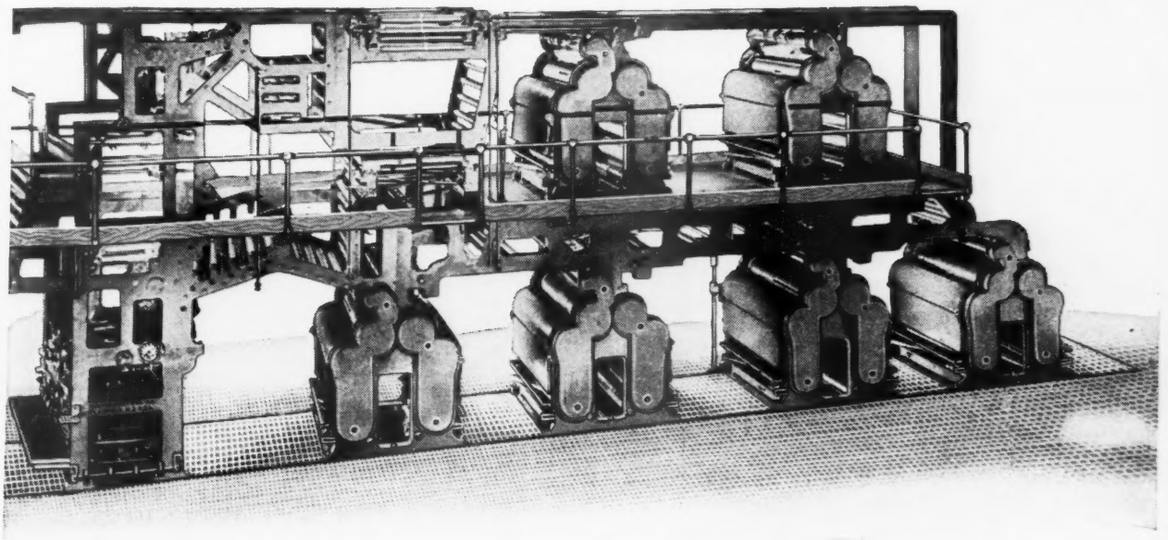
Printing Industry of America — James R. Brackett, General Manager, 719 Fifteenth St., N.W., Washington, D. C. 1949 PIA Convention—Hotel Biltmore, Los Angeles, Nov. 14-17, 1949.

SNPA (Eastern Div.) Mechanical Conference—Chairman, Luther Wright, Mechanical Supt., New Orleans (La.) *Item;* Secretary, Tom Tanner, c–o SNPA, P.O. Box 1569, Chattanooga 1, Tenn.; Chairman of Supply and Equipment Group, Owen W. Asbell, Ludlow Typograph Co., representative in Atlanta, Ga.

SNPA (Western Div.) Mechanical Conference—Mayo Hotel, Tulsa, Okla., February 21 and 22, 1949. W. J. Dowell, Head Machinist, Newspaper Printing Corp., Tulsa, is General Chairman. C. W. Tabb, SNPA Executive Committee, 723 Texas Bank Bldg., Dallas, Tex., is Secretary. Chairman of the Supply Men's Committee is Don Malcolm, Dallas Representative, Burgess Cellulos Co., Freeport, Ill.

Southwestern Graphic Arts Conference—E. J. Deubner, Executive Secretary, 130 No. Volutsia Ave., Wichita 8, Kan.

MOST VERSATILE FOR BLACK AND COLOR PRINTING



SCOTT OCTUPLE PRESS

with 4 Superimposed Color Couples

Four Color Printing is completely separated from regular black printing. This avoids loss of black page capacity when printing colors, permits advance preparation of color runs, provides separate make-ready for each color if necessary and allows editorial changes between editions without disturbing register of color pages.

Color rotation always the same, eliminating reversible cylinders and loss of time, ink and rags for washups.

By means of an ingenious angle bar arrangement Four Color Printing can be easily located on any desired page or section.

Illustration shows one end of a Scott Triple Octuple Press now in operation in the plant of the

DAYTON, OHIO, DAILY NEWS

and others now under construction for the

BUFFALO, N. Y., COURIER-EXPRESS
MIAMI, FLA., DAILY NEWS

Send for new Catalog of the New Scott Press showing various arrangements for Black and Color Printing.

WALTER SCOTT & CO., INC.

PLAINFIELD, N. J.

SNPA (Eastern Div.) Conference

NEWSPAPER workers need to know more about the facts of the business in which they are engaged, asserted Ralph Nicholson, publisher of the New Orleans *Item*, before the SNPA (Eastern Div.) Newspaper Mechanical Conference. The Conference was held in Biloxi, Miss., on Monday and Tuesday, September 27 and 28 at the Buena Vista Hotel.

Continuing, Mr. Nicholson said: "I would like to see more thinking and acting about how to produce a better newspaper; more concern for its financial stability and well being, and less harassing of management."

Chairman Luther Wright, Mechanical Supt. of the New Orleans *Item*, said that newspapers must obtain more production per man to offset high and increasing production costs. He also said papers must produce a more attractive product to meet competition from radio and magazine advertising. Those two musts, he said, could be accomplished through proper equipment and improved systems for handling every phase of the work.

"Problems confronting newspapers of the South," continued Mr. Wright, "are many. First, skilled labor is increasingly scarce. There are not enough extras from which to build up the force to meet peak loads. Production costs are increasing faster than advertising and circulation rates can practically be raised, which threatens to throw the balance of revenue and operating expenses to the minus side."

Approximately 200 production and mechanical executives attended the conference from all sections of the Eastern Division territory. The exhibits included about 20 machines which were operated for demonstration purposes.

Topic Leaders

Mutual discussion from the floor dominated the program. Topic leaders were: Machinists, H. R. Capps, sr., Chief Machinist, Jacksonville (Fla.) *Times-Union*; Stereotypers, W. B. Astor, jr., Stereotype Supt., Memphis (Tenn.) *Commercial-Appeal*; Pressroom, W. L. Knighton, Pressroom Supt., Birmingham (Ala.) *News* and *Age-Herald*; Engraving Room, T. C. McLemore, Mechanical Supt., Mobile (Ala.) *Press-Register*; Mailroom, Robert Bissell; Small Newspapers, Louis W. Divine, Anniston (Ala.) *Star*.

Executive Committee

The following executives were selected for membership on the executive committee:

Chairman—Luther Wright, Mechanical Supt., New Orleans *Item*.

Term Expiring 1949—Clyde H. Apple, Winston-Salem (N.C.) *Journal-Sentinel*; John C. Steele, Stereotype Supt., Louisville (Ky.) *Courier-Journal and Times*; Harry Wilson, Stereotype Supt., Birmingham (Ala.) *News and Age-Herald*.

Term Expiring 1950: A. M. Brice, Miami (Fla.) *Daily News*; Luther Wright, Mechanical Supt., New Orleans *Item*; L. H. Pickens, Greenville (S.C.) *News-Piedmont*.

Term Expiring 1951: F. S. McDonald, Atlanta (Ga.) *Journal*; S. K. Trunnell, Composing Room Supt., Roanoke (Va.) *Times and World-News*; Louis W. Divine, Anniston (Ala.) *Star*.

PNPA-NJPA Joint Meeting

Both the Pennsylvania and the New Jersey Newspaper Publishers Associations have decided to hold a combined mechanical conference at the Penn Harris Hotel in Harrisburg, Pa., on April 1 and 2, 1949. Arrangements for the conference will be in charge of Edward O. Davies, Mechanical Supt. of the Harrisburg (Pa.) *Patriot* and *Evening News*.

A committee comprised of Neal E. Dyer, Mechanical Supt. of the Camden (N. J.) *Courier Post*; Donnell F. Shortell, Mechanical Supt. of the Asbury Park (N. J.) *Press*, and Wm. C. Rolle, Mechanical Supt. of the Newark (N. J.) *News*, has been named to meet with the PNPA mechanical Committee to make arrangements for the joint meeting next April.

The PNPA Mechanical Committee personnel is as follows: E. O. Davies, Harrisburg *Patriot* and *Evening News*, Chairman; Paul V. Driscoll, Connellsville *Courier*, Vice Chairman; Nicholas M. Fellman, Chester *Times*; D. Philip Young, York *Dispatch*; L. W. Barnes, Johnstown *Tribune* and *Democrat*; S. D. Evans, Lebanon *News-Times*; George C. Stevens, Scranton *Times*; D. O. Nelson, Altoona *Mirror*; R. R. Cranmer, *Grit*, Williamsport; M. L. Detwiler, Lancaster Newspapers, Inc.; Col. P. M. Kienzle, Tyrone *Herald*; N. DeWitt Ray, Indiana *Evening Gazette*; J. Harold Mintun, Pittsburgh *Post-Gazette*; Edward Gase, *Valley Daily News*, Tarentum; C. E. Humelsine, Hagerstown (Md.) *Herald-Mail*; T. F. McNamara, Pittsburgh *Sun-Telegraph*; John T. Arnold, New Brunswick (N. J.) *Home News*; J. R. Barley, Aliquippa *Times*; M. T. Alderman, *Sharon Herald*; Stanley Myers, Philadelphia *Bulletin*; Allen C. Spurgeon, Uniontown Newspapers, Inc.; Harry W. Sherman, Allentown *Call-Chronicle*; Ralph E. Leuchtner, Pottsville *Evening Republican*.

New Location

Milt and Harry Rectanus announce that the Service Electrotype Co., Pittsburgh, is now housed in a new location. The new address is Graphic Arts Bldg., 422 First Ave., Pittsburgh 19, Pa. Phone numbers are COurt 1216, 1223. Company occupies the first floor of the Graphic Arts building.

Vari-Typer Moves

Ralph C. Coxhead Corp., manufacturer of the Vari-Typer has completed negotiations for a new plant to house expanded manufacturing facilities for the new DSJ Vari-Typer. The 3 a. 3-story plant is located in Newark, N. J. at 720 Frelinghuysen Ave. The present factory at 333 Ave. of the Americas, in New York will continue manufacturing, functioning as an additional plant. Ralph C. Coxhead, Chairman of the Board, and Stuart P. Coxhead, president, made plans for the expansion program some time ago.

The new plant in Newark will house research laboratories for new printing processes and techniques. Application developments will also be carried on, for example, the study of newspaper production, catalog preparation and similar large scale reproduction problems, where type composition is an acute cost factor.

MECHANICAL COMMITTEE PERSONNEL IS REVISED

MEMBERSHIP of the ANPA Mechanical Committee has been revised. Membership of the Committee now consists of 14 executives. Appointments made by President David W. Howe of the American Newspaper Publishers Assoc. are as follows:

Chairman, Edwin H. Evers, Production Mgr., St. Louis (Mo.) *Globe-Democrat*.

William Baumrucker, Jr., New York (N. Y.) *News*.

John L. Blake, Scripps-Howard Newspapers, New York, N. Y.

T. A. Corcoran, Purchasing Agent, Louisville (Ky.) *Courier-Journal* and *Times*.

R. R. Cranmer, Business Mgr., Williamsport (Pa.) *Grit*.

B. F. Garrity, Production Mgr., Gannett Newspapers, Rochester, N. Y.

Leslie J. Griner, Production Mgr., Detroit *News*.

M. A. Hagan, Photo-engraving Supt., Philadelphia *Inquirer*.

W. B. Pape, Waterbury (Conn.) *Republican* and *American*.

John W. Park, Production Mgr., Chicago *Tribune*.

Fred W. Schaub, Business Mgr., Decatur (Ill.) *Herald* and *Review*.

J. J. Shea, General Production Director, Hearst Newspapers, New York, N. Y.

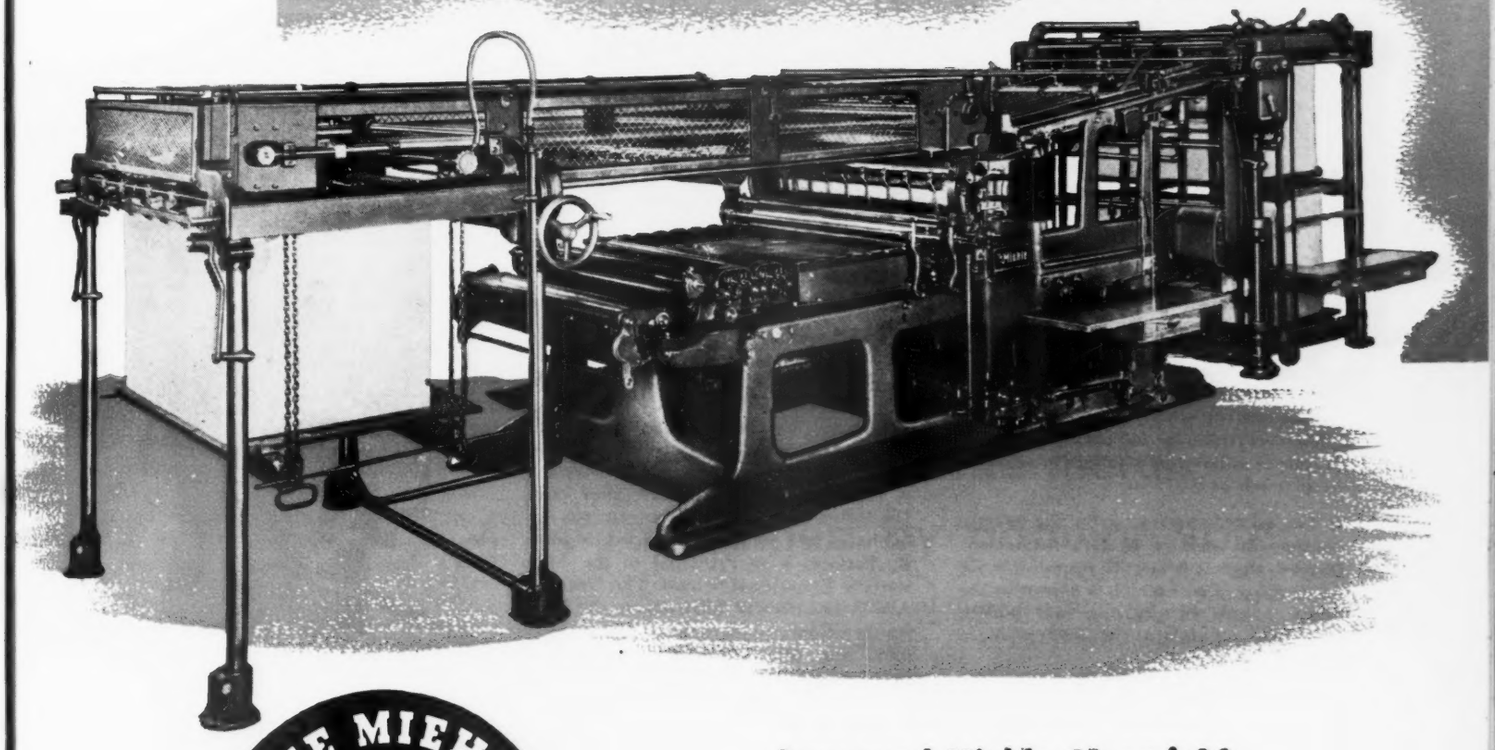
J. L. Stackhouse, President, Eaton (Pa.) *Express*.

Earl Weiskittel, Pressroom Supt., Youngstown (O.) *Vindicator*.

...in Chicago it's MIEHLE

MORE THAN 650 new postwar Miehle presses have been added to the thousands already operating in the Chicago area. This demand for Miehle equipment is based on the experience of large and small plants in securing maximum production at minimum cost with Miehle presses . . . even on the toughest jobs. The constantly high production turned out by Miehles is based not on press speeds alone, but on steady, dependable operation as well . . . on *all kinds* of runs . . . together with simplicity of adjustments, complete accessibility and other features which reduce down time between runs—*these* are reasons why printers and pressmen prefer Miehle.

It is true in Chicago, and wherever fine printing is done—*printers depend on Miehle.* Visit a neighboring plant—ask the man who runs one—and you will see why Miehle presses are your logical choice for maximum production of highest quality work—day in and day out.



THE MIEHLE 41 LETTERPRESSES 46
Product of years of development

. . . ask the man who runs one

Improved Miehle 41 and 46 Single and Two Color Letterpresses

Included among recent installations in the Chicago area and throughout the country are many of the improved Miehle 41 and 46 Single Color and Two Color Letterpresses. Here are some of the features of these modern presses which mean *real production:*

New Dexter Stream Feeder • Positive Chain Delivery • Four Roller Distribution
Convenient Accessibility • Simple Adjustments • Steady, Dependable Operation

Write for new catalog describing these new letterpresses.

MIEHLE PRINTING PRESS & MFG. CO.
2011 HASTINGS STREET (14th and Damon)
CHICAGO 8, ILLINOIS

General Report on Printing Industry

A GENERAL report about the printing industry will be published soon by J. W. Rockefeller, jr. and Associates. As is inferred from sponsor's connection with the Graphic Arts industry, the report is prepared from three major professional undertakings of the Rockefeller firm, plus a number of smaller assignments in plants of printing companies. The report is intended to present a picture of the industry and to serve as a reliable guide to the commercial printer in making his plans for the immediate future.

The three major assignments from which the present report has been prepared are: 1946 ANPA investigation looking toward possibility of improving the appearance of newspapers; 1947 survey of printers' press needs including personal visits to printers and to manufacturers of printing equipment; 1948 objective by a large consumer of printing to write specifications for printing purchases and advise on the most economical methods of production.

A number of excerpts from the Rockefeller Report are printed below. These indicate the results arrived at as a result of studying the assignments mentioned in the above paragraphs:

● The same serious problem confronts virtually all letterpress printers, including newspaper publishers, viz., the variation in plates and packing of the press. A partial solution to this problem has been arrived at by the general commercial printer through the tedious and expensive method of overlaying. Since the newspaper cannot afford the time necessary for overlaying, its solution, to date, has been the use of a resilient blanket, the surface of which is soft enough to allow everything on the plate to print up in spite of differences in height amounting to as much as 0.015 in.

● The solution arrived at by the general commercial printer is far from satisfactory, since it is largely responsible for an element of cost which is absent in the offset process of printing and which, therefore, handicaps the letterpress in competition.

● The solution arrived at by the newspaper printer falls short of perfection because it results in an excessive supply of ink being deposited on the soft rubber blanket which, in turn, offsets on the first impression side of the page. This "first impression offset" has been so bad in some instances that newspapers have been compelled to give reduced advertising rates to advertisers whose ads appear on the first impression side of the sheet.

● Wage costs per 1000 impressions produced on a small automatic press such as the Miehle Vertical vary from plant to plant from 77c to $2.63. On a Miehle Horizontal the variation was found to be from 94c to $2.62.

● The production per hour on the average Miller Simplex Press studied in the over eight years of age group was 2297. On the same make of press in the under seven years of age group the production average was 2483.

● The speed at which a press is operated when left to the discretion of the operator bears a distinct relation to the production loss, or K factor, a function of the time required for loading and unloading the press, as well as for other unreported stops. It has been found that when such unreported stops amount to more than 40% of the total reported time, the pressmen will reduce the running speed of the press to reduce this ratio.

● The principal quality sought in a small automatic press by most printers is accuracy of register. Next to this comes high speed, followed by minimum makeready. The larger printer, as a general rule, recognizes the importance of offset printing as competition more readily than the smaller printer. The expressed and actual needs of the printer may exhibit a wide variation.

● The average buyer of printed forms can save at least 25% on his purchases through a survey and revision of his forms to meet actual requirements at minimum costs.

The Rockefeller Report on the Printing Industry—May be obtained postpaid at $1 per copy. Size, 8½ in. by 5½ in., 48 pages. Order direct from J. W. Rockefeller, jr. and Associates, Consulting Printing Engineers, 140 Cedar St., New York 6, N. Y.

Graphic Arts Section Meeting

The Graphic Arts Section Meeting of the National Graphic Arts Education Association will be held in connection with the 42nd Annual Convention of the American Vocational Association, at Milwaukee, Wis., November 30-December 4, 1948. The Graphic Arts Meeting is scheduled for Thursday afternoon, December 2. The local arrangements are in charge of a committee headed by John R. Patlow, Vice Principal of the Milwaukee Vocational School. The Graphic Arts Association of Milwaukee, the Milwaukee Club of Printing House Craftsmen, and organized labor groups are cooperating.

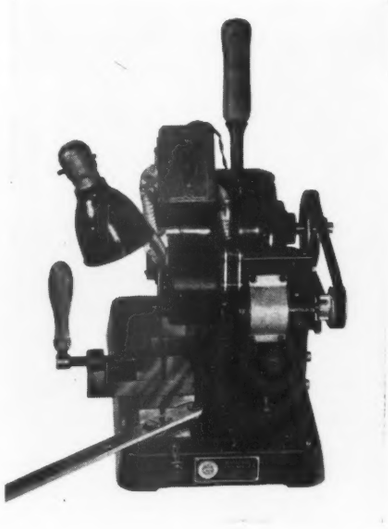
Patriotic Calendar

CALENDARS for the 1949 year are beginning to put in an appearance. One that has drawn much comment is being distributed by H. H. Heinrich of New York who uses The Freedom Pledge as a theme and is portrayed by the use of a simulated gold plaque and the patriotic red, white and blue colors. The plaque, with the American eagle at its top, is flocked with tiny glass spheres for effect. The Pledge reads: "I am an American, A free American, Free to speak—without fear, Free to worship God in my own way, Free to stand for what I think right, Free to oppose what I believe wrong, Free to choose those who govern my country, This heritage of freedom I pledge to uphold, For myself and all mankind". This pledge is made available through the courtesy of The American Heritage Foundation. The calendar measures 16 in. by 33 in.

Rouse Hand Miller

DEVELOPED some time after the Rotary Vertical Mitering Machine, the Rouse Hand Miller will have utility in many printing plants for certain cutting or light milling tasks. Several new attachments recently have been developed for the Rouse Hand Miller, high speed, ball bearing, motor-driven machine made for handling light cuts in brass, aluminum, and similar materials. The Hand Miller is manufactured by H. B. Rouse & Co.

The No. 7 Vise, one of the new attachments, considerably increases the Hand Miller's range and productive ability. It is fitted with a specially slotted removable jaw enabling it to hold odd shaped pieces and can also be converted into an economical jig for use on other equipment. Rouse has also designed the new No. 9 cast iron Safety Cutter Guard. The Hand Miller operator locates and adjusts the guard left or right as to his particular job, making it impossible for him to injure his hands. The No. 9 guard may be drilled for a coolant fitting which will



convey the coolant directly to the cutting tool.

Further information may be secured from H. B. Rouse & Co. by addressing your request to *Printing Equipment Engineer*.

Push-Top Waste Receptacles

A TWO-COLOR bulletin recently published by Precision Equipment Co. features Bennett-Bilt Receptacles for waste paper, rags, etc. This waste receptacle is built with stainless steel feet and is fitted with independently hinged doors on each side. A copy of this bulletin may be obtained by writing Precision Equipment Co. direct.

Patents For The GRAPHIC ARTS FIELD

Covering patents issued August 24, August 31, September 7, September 14 and September 21.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issuing each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating

During the five weeks covered by this report, no patents have been issued for this heading.

Composing Room Equipment

2,449,381. A LOCK-BAR FOR A FORM LOCKING-UP DEVICE is adapted to lie across the space within a printer's chase and engage one side of a form. It has a rack teeth along one adge. A second lock-bar extends at right angles to the first bar in the space within the chase and has rack teeth along one edge. A lock-up device is slidably guided upon the second bar and has a hollow block formed thereon arranged to engage the first lock-bar. A pinion is journaled in the block and meshes with the rack teeth of the second bar. The pinion has a socket adapted to receive a tool for rotating the pinion. Bar locking means are carried by the lock-up device and mesh with the teeth of the lock-up with which the pinion meshes to prevent relative motion between the lock-up device and lock-bar. Invented by Henry J. Hilland, Chicago, Ill. Unassigned. Application December 12, 1946. 11 claims.

2,449,854. A TYPE CASTING MACHINE is provided in which the top mold member is mounted for independent swinging movement relative to the bed mold member and is adjustable to and from the bed mold member to receive forms or mats of different thickness. The frame of the machine has opposed horizontal ways and the flat faced bed mold member is provided with way engaging journals or gudgeons, by which it is slidably and swingably supported. Arms on bed member project downwardly from journals and are linked to frame so that bed mold is swung from horizontal to upright position and vice versa as it is reciprocated on the ways. Top mold is supported on posts freely and slidably mounted on the bed mold member at the rear thereof. Top mold has pivots engaging a pivot rod on the upper ends of the posts, the pivots for the top member constitute counterbalance levers and have curved surfaces. Brackets having spring housings are at the lower ends of the posts and counterbalancing springs for the top mold are arranged in the housings. Cables are connected at one end to the counterbalance levers to wrap upon their curved surfaces and at their other ends to the counterbalancing springs. The mold members are automatically adjusted from a horizontal make-ready position to upright casting position by rearward thrust and forward pulling movement. Invented by Edward C. Krueger, Otsego, Mich. Assigned to Hammond Machinery Builders, Inc., Kalamazoo, Mich. Application April 12, 1946. 5 claims.

Feeding, Folding, and Delivery

During the five weeks covered by this report, no patents have been issued for this heading.

Plate Making

2,448,749. THE TREATED PLANOGRAPHIC PRINTING PLATE of invention does not reproduce finger prints, resin or rosin specks in the copies reproduced therefrom. In practise, a 5 percent solution, by weight, of 2 amino, 2 methyl, 1,3 propanediol is prepared in water. The printing surface of the paper planographic printing plate, which may be of parchment or other cellulose base sheet, is coated with the solution. Plate is preferably run between a pair of squeeze rolls and allowed to dry. It may then be provided with a lithographic image by means of any suitable lithographic image-form-

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ing material and then treated with an aqueous planographic etching or dampening solution to condition the plate for use in a planographic printing operation. Invented by Charles H. Van Dusen, Jr., Willoughby, Ohio. Assigned to Addressograph-Multigraph Corp., Wilmington, Del. Application January 24, 1947. 4 claims.

2,448,861. A DESIGN IS FORMED IN A CELLULOSIC SHEET for printing purposes by impregnating a hydrolyzed surface layer of a hydrolyzed cellulose organic acid ester sheet with ammonium bichromate. The surface is exposed to light under a design and a portion of the exposed hydrolyzed surface is selectively removed with a solution of water-soluble chlorite or water-soluble hypochlorite. The hydrolyzed layer which remains on the surface of the final printing plate is hydrophilic and repels greasy inks. The unhydrolyzed material is hydrophobic and carries the ink used for printing. Invented by Ralph S. Colt, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application Aug. 23, 1945. 8 claims.

Design 151,044. ORNAMENTAL DESIGN FOR A ROUTING MACHINE is apparently for the reproduction of printed material, such as type, cuts, or printing work pieces from a pattern on to a printing plate, one example of which is a zinc plate. A generally square, waist-high housing incorporates a pantograph controlled tracer stylus and routing tool on the top of the housing. This machine is probably manually controlled and various control knobs are aligned down the center front of the housing. A foot-operated pedal is shown near right side of the base. Invented by William F. Huck, Forest Hills, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application July 4, 1947.

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Printing Inks and Related Chemicals

2,447,750. A SYNTHETIC MATERIAL, derivative of the adduct of levopimaric acid and maleic anhydride, is characterized by stability to heat at temperatures up to 250°C. and by stability to ultraviolet radiation. It is of value in the preparation of polyhydric alcohol esters, in the preparation of varnishes and other coating compositions, printing inks, etc. The material is a dicarboxylic acid and has the structural formula of a theoretically obtained by the Diels-Alder addition of levopimaric acid and the monoester of fumaric acid with methyl, ethyl or isopropyl alcohol, assuming the trans configuration of the fumaric ester group remains unchanged. Invented by George C. Harris, Wilmington, Del. Assigned to Hercules Powder Co., Wilmington, Del. Application May 4, 1946. 14 claims.

2,447,756 and 2,447,757. PROCESS FOR TREATING CELLULOSE ETHERS TO IMPROVE THEIR DISSOLVING PROPERTIES. These patents disclose processes of transforming a cellulose ether, which will not readily dissolve in 8 to 9 percent NaOH solution at room temperature, into a product which will dissolve sufficiently at room temperature to give a solution sufficiently concentrated to be suitable for being shaped and coagulated to produce regenerated shaped structures. Turkey red oils, glycerine, a glycol, etc. may be added to solutions of the xanthates of the cellulose ethers. Products are usable as fixing or thickening agents for pigments in textile printing, for paper surfacing, etc. Invented by Leon Lilienfeld, deceased, late of Vienna, Germany, by Antonie Lilienfeld, administratrix, Winchester, Mass. Assigned to Lilienfeld Patents Inc., Boston, Mass. Original application July 6, 1938 divided and these applications July 12, 1944; in Great Britain July 12, 1937. 3 and 4 claims respectively.

2,448,520 ESTERS. Invention relates to synthetic drying oils and coating composition containing them. A method disclosed comprises reacting together under ester forming conditions materials containing the radicals of a polyhydric alcohol, a monocarboxylic acid, and a benzoic acid selected from the group which consists of those in which the carboxy acryl group is linked directly by a single bond to an ethylenically bonded carbon and those in which the carboxyl aryl group is linked to an ethylenically bonded carbon through a carbonyl group. Compositions may be applied to metal, paper, wood, and textiles. Specific manufactures that can be produced include printing inks, etc. The novel properties are said to flow from the particular arrangement of aromatic ring and substituted ethylenic group, or the particular sequence of aromatic ring, carbonyl group and substituted ethylenic group. Invented by Martin E. Cupery, Wilmington, Del. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application November 16, 1943. 14 claims.

2,448,626. THE ALKYLOL AMINE SALTS OF HYDROXY HIGHER FATTY

Choose THE No. 4* VANDERCOOK PROOF PRESS FOR THE FINEST REPRODUCTION PROOFS

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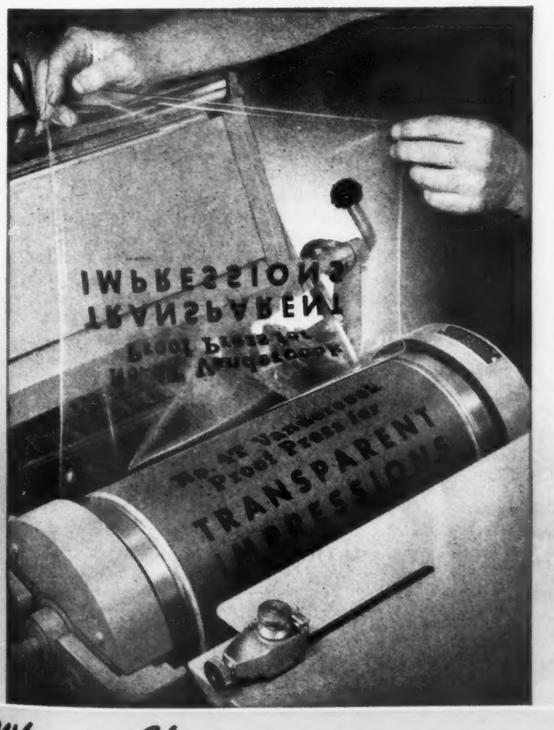

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ACIDS which are disclosed are useful as surface-active agents, emulsifying agents for casein paints, dispersants for carbon black, pigments, printing inks and including water type printing inks. They are formed by reaction between monohydroxy or polyhydroxy higher fatty acids and hydrated amino compounds, preferably alkylol amines, involving interaction between the amino hydroxyl ion of the hydrated amino group and the hydrogen ion of the carboxyl group of the hydroxy fatty acid. The nitrogen is pentavalent, being bonded to 3 hydrogen atoms, to the fatty acid radical through the oxygen atom of the hydroxyl of the carboxyl group, and to a carbon atom which is bonded to 3 groups, one of which is alkylol and the other two being hydrogen, alkyl or alkaryl. A representative product is a dihydroxy tertiary butyl ammonium 9,10,12-trihydroxystearate. Invented by Benjamin B. Schaeffer, Upper Darby, Pa. Assigned to United States of America as represented by the Secretary of Agriculture. Application December 8, 1944. 10 claims.

2,448,823. A PROCESS OF PREPARING A TRIARYLMETHANE PIGMENT DYESTUFF includes effecting oxidation of o-phenyl-N, N-dimethylaniline under acidic conditions in the presence of a mixture of sodium chloride and copper sulfate. The oxidation product is separated and dissolved in an aqueous acid medium and reacted with an acid to form an insoluble pigment. The precipitated product is separated and has a strong blue color. The free dye bases have a distinctive violet-blue shade and are applicable to coloring cotton, wool and silk. Dissolved in fatty acids, such as oleic, the dye solution is effective as a toning agent or coloring agent in paints, printing inks and coating compositions, including those using gas black pigments. Invented by Alexander H. Popkin, Bronx, N. Y. Assigned to Sun Chemical Corp., New York, N. Y. Application March 11, 1944. 9 claims.

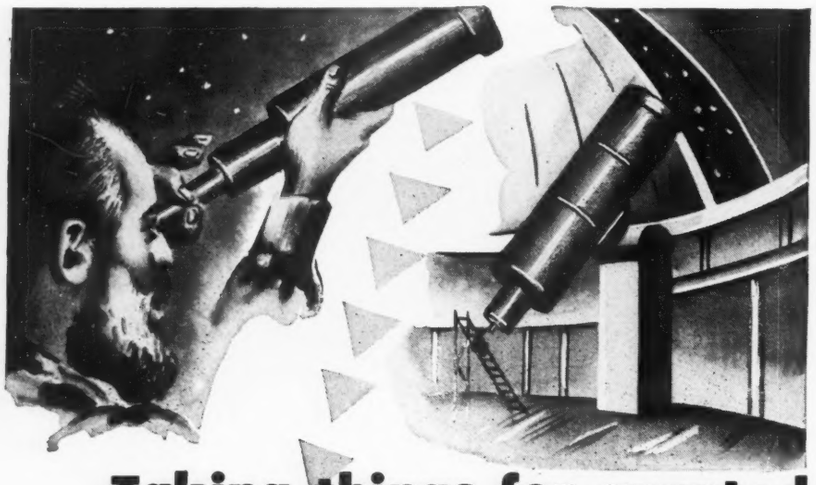
2,449,006. PRINTING PASTES FOR COTTON PIECE GOODS having superior fastness to light, heat and washing may be prepared according to the process of the invention. One paste is prepared by dry mixing from 3.3 parts of diazonium chloride from 4'-allyloxy-4-amino-diphenylamine, 2 parts of magnesium sulfate dihydrate, and 1 part of anhydrous sodium sulfate. Two parts of this dry mixture are dissolved in 25 parts of water and the solution is treated with 73 parts of suitable carbohydrate thickener. This thickened paste may be printed on cotton piece goods from an engraved steel roll that has previously been impregnated with the anilide of 2-hydroxy-3-naphthoic acid in an alkaline grounding liquor. The paste is dried at 65°C., is cleared in a hot dilute soda ash bath and is treated in ½ percent soap solution at 60°C. It is then dried, after rinsing. Invented by Robert P. Parker, Somerville, and John J. Denton, Bound Brook, N. J. Assigned to American Cyanamid, New York, N. Y. Application July 3, 1944. 8 claims.

2,449,230. THE LIQUID PRINTING INK of invention consists essentially of coloring matter and a binder dispersed in a hydrophilic liquid carrier containing water. The predominant constituent of the binder is a lignin from fiber liberation. A very fast drying ink of thin body which forms water-resistant prints contains the following: 26 parts precipitated soda lignin, 34 parts formamide, 16 parts water, 4 parts 2-methyl-2,4-pentanediol, 5 parts hexamethylene tetramine, 14 parts carbon black and 1 part triethanolamine. Parts are by weight. Invented by Clarence E. Irion, Essex Fells, N. J. Assigned by mesne assignments to Margot Corp., New York, N. Y. Application July 25, 1945. 18 claims.

2,449,956. DIALKYLCYCLOHEXYL GLYCOLS AND CERTAIN DERIVATIVES. Among the materials claimed are fatty acid esters of the 3,4-dialkylcyclohexyl glycols in which the dialkylcyclohexyl group is directly attached to a carbon atom bearing one of the hydroxyl groups and in which the two hydroxyl groups are in the 1,3-position relative to each other on carbon atoms in a side chain of at least four carbon atoms. The novel glycols (butanediols) have many important uses. They are useful as constituents of printing inks, their function being to prevent the ink from drying too rapidly, as anti-foaming agents in textile printing processes and as textile assistants. They have various other uses. Invented by Edward C. Shokal, Oakland, and Rupert C. Morris, Berkeley, Calif. Assigned to Shell Development Co., San Francisco, Calif. Application July 9, 1945. 6 claims.

Printing Presses and Equipment

2,447,868. INK AGITATOR for the ink fountain of a printing press includes a



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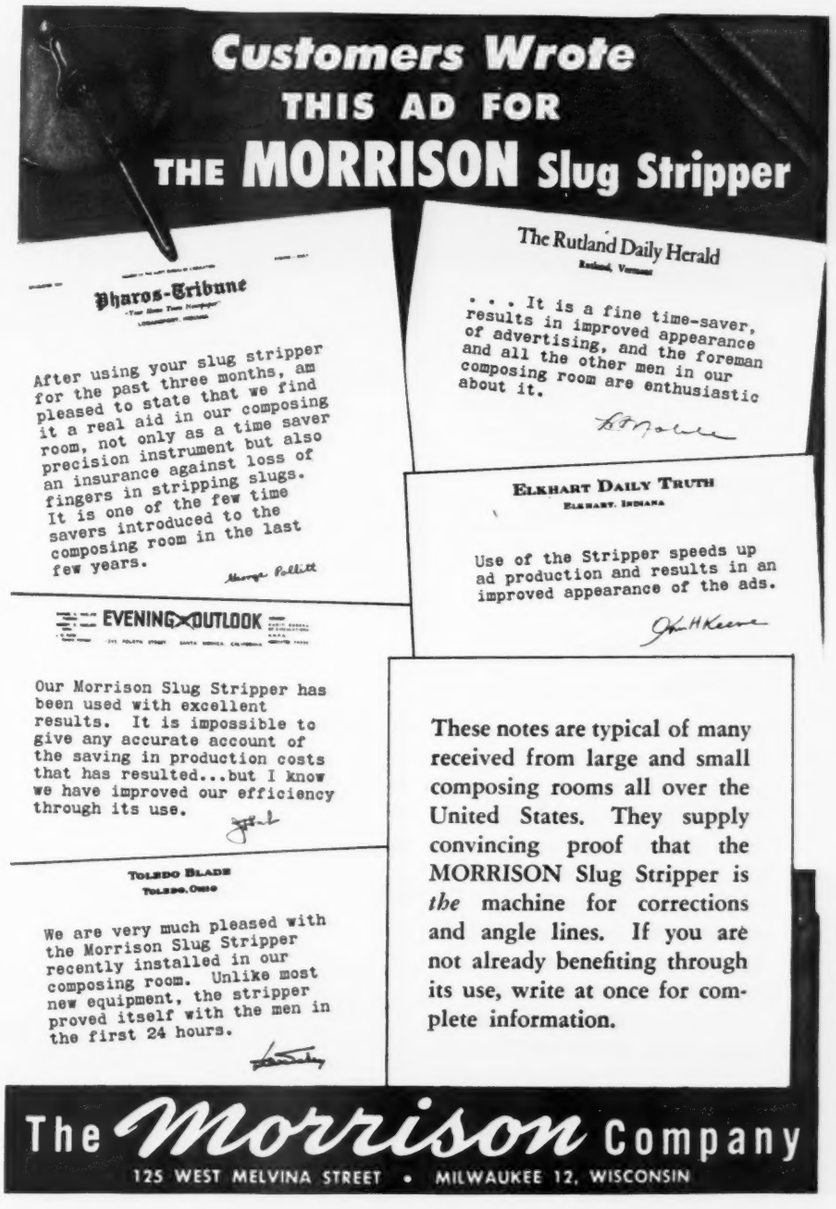
shaft driven from a motor at one end. The opposite end of the shaft for a considerable portion of its length is of enlarged diameter to form a shaft having a reduced portion and an enlarged portion. Screw threads are formed on the enlarged portions of the shaft. A square shaped tubing encloses the reduced portion, and a square tubing of larger diameter encloses the enlarged portion and is mounted for longitudinal movement on the first tubing. A plurality of members on the larger tubing carry agitator blades. A fork within the movable tubing engages the shaft to reverse movement of movable tubing and its blades. Backward and forward motion continues automatically until the motor is shut off. Invented by Douglas Ortleb, St. Louis, Mo. Unassigned. Application May 9, 1945. 1 claim.

2,447,872. DRIVING MECHANISM FOR A ROTARY TYPE PRINTING UNIT is provided. It has a pair of side-by-side couples each including a printing cylinder and a coated impression cylinder. The drive mechanism includes a horizontal drive shaft below the couples and depressed along the side of the press. A set of ink transferring rollers is located generally below each of the printing cylinders, and ink fountains convey ink to the roller sets respectively. A pair of vertical shafts laterally spaced with respect to each other not only directly connect the horizontal shaft to respective ones of the printing cylinders but also convey driving power to the impression cylinders, the ink transferring rollers and the ink fountain. One advantage is that there is no obstruction laterally of the cylinder occasioned by the drive mechanism. Invented by Joseph A. Riggs, Hinsdale, Emory W. Worthington, Chicago, and Christopher Verne Knell, Glen Ellyn, Ill. Assigned to The Goss Printing Press Co., Chicago, Ill. Application January 12, 1945. 13 claims.

2,447,887. A SHELL TYPE FRAME FOR A ROTARY PRINTING PRESS UNIT is of inverted U-shape with an integral reenforcing yoke extending between the legs of the U. The U is of channel-shaped cross section throughout its entire length for the housing of the drive mechanism therein. The frame has a pair of apertures on each side of a vertical median plane dividing frame for journaling the ends of the components of printing couples located with one couple on one side of the plane and the other couple on the other side. The frame includes structurally separable cap portions divided from the remainder of the frame along angularly related parting lines passing respectively through the centers of each pair of apertures. The frame of the invention affords the necessary strength and rigidity while eliminating a large portion of the machining cost that has resulted from the use of slab type frames with intricate sectionalized housings. Invented by Emory W. Worthington, Chicago, Ill. Assigned to The Goss Printing Press Co., Chicago, Ill. Application January 12, 1945. 11 claims.

2,447,991. VIBRATION OF PRINTING CYLINDERS OF LITHOGRAPHIC OFFSET PRINTING MACHINES is eliminated by equalizing the pressure during revolution of the cylinders. This result is accomplished by provision of spring-loaded plungers set into the impression cylinder at the point or points where gaps in the surface of the blanket cylinder are opposed to the periphery of the impression cylinder, and providing hardened metal rings or bearer surfaces on the ends of the blanket cylinder to be engaged by these plungers. Pressure created by plungers, bearing against ring surface, at the instant when gap in blanket or printing cylinder opposes periphery of impression cylinder, is made equal to normal pressure on web being printed and hence there is no reduction in pressure between cylinders while gap is passing. Invented by Laszlo M. Stempel, New York, N. Y. Assigned, by mesne assignments, to R. Hoe & Co., Inc., New York, N. Y. Application June 13, 1946. 9 claims.

2,448,226. MOISTENING DEVICE FOR DAMPENING THE LITHOGRAPHIC PRINTING SURFACES OF PRINTING CYLINDERS of sheet-fed or reel-fed presses is disclosed. In one form, water, gravity fed, i e., under pressure supplied from a suitable source which is properly enclosed, and air under pressure supplied by an air compressor or a pump driven from any suitable part of the existing press drive, are forced through main feed pipes into the dampening device. The latter is associated with the printing plate cylinder by being arranged horizontally across the same but not in contact with it. Fitted into the dampening device are a number of spray nozzles. Spacing of the nozzles is determined by the width of the spray from each nozzle so as to secure an equal spread of spray across the full width of the printing plate. Preferably, each nozzle is separately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. . . It is a fine time-saver, results in improved appearance of advertising, and the foreman and all the other men in our composing room are enthusiastic about it.
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Use of the Stripper speeds up ad production and results in an improved appearance of the ads.
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adjustable to control the amount of spray emerging therefrom and to cut off the spray completely or partially in the event that only a portion of the printing plate is used. The depth of the effective spray may be controlled by adjustment of the nozzles and by varying their distances from the printing plate. The areas to be sprayed can be limited by guard plates above, below, and at the ends of the device. Any spray condensing on the guard plates will drain off. Invented by Horace Edwin Marsden, Snaresbrook, London, Eng. Unassigned. Application January 15, 1945; in Great Britain February 4, 1944. 9 claims.

2,448,256. ELECTRONIC MOTOR CONTROL FOR PRINTING PRESSES AND THE LIKE. An embodiment of the invention is for the control of a three-phase induction motor driving a printing press. Motor is required to operate at adjustable high speeds at normal torques, must start with a relatively high torque, and for threading paper into the machine must be operable at a very low speed requiring a relatively high torque. Patent discloses, in a printing press control system, a source of polyphase current and a motor which has a polyphase primary winding including a plurality of terminals for connecting it to the source. A single pair of space discharge devices are connected inversely parallel to each other between one phase of the source and one of the terminals. Each of the devices has a control electrode for varying its impedance and means to impress upon the control electrodes a potential varying in response to the speed of the motor to thereby control the current passing through the devices. Invented by William H. Elliott, Shorewood, Wis. Assigned to Cutler-Hammer, Inc., Milwaukee, Wis. Application April 9, 1945. 15 claims.

2,448,292. GEARED ADJUSTMENT MEANS provide for independently adjusting the printing cylinders of a printing press, particularly the design cylinders of an intaglio printing press, rotatively and in an endwise direction. Patent discloses in combination, a rotary cylinder, and its shaft, an auxiliary drive shaft axially aligned therewith and slidably locked thereto, a main drive shaft located adjacent and at right angles to the auxiliary drive shaft, and two intermeshing hypoid gears. One of the latter is on main drive shaft and the other on the auxiliary drive shaft. Both may be manually and automatically operated for rotatively adjusting the drive shaft hypoid gear with respect to the main drive shaft to rotatively adjust the rotary cylinder. Invented by Howard M. Barber, Pawcatuck, Conn. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application October 22, 1943. 6 claims.

2,448,975. PRINTING PRESS INKER uses rollers of small diameter wherein the first ink taken from a common distributing roller is conducted to a set of form rollers positioned to make contact first with the plate on the plate cylinder and the second charge of ink taken from the common distributing roller is conducted along a path providing additional working of the ink to a set of form rollers positioned to make contact with the plate after its contact with the first set. The second set functions to smooth out and equalize the ink applied by the first set. The mechanism includes positively rotated inking rollers, each of which is geared. A driving mechanism rotates the rollers and is made up of gear teeth meshing with the roller gears. An ink transmitting roller is arranged with its axis within the pitch circle of the gear teeth and turns at an angular speed different from that of the gear teeth. A roller between the ink transmitting roller and each of the two inking rollers makes an ink patch between the two inking rollers by way of the transmitting roller. Invented by Charles W. Harrold and Henry F. Meyer, University Heights, O. Assigned to Harris-Seybold Co., Cleveland, O. Application September 5, 1942. 25 claims.

2,449,852. GEAR DRIVE FOR PRINTING AND OTHER MACHINES. A gear drive is provided for printing, book-binding and other machines in which, during the working of the machine, parts of the machine are driven intermittently. There is combined with a conventional mutilated driving gear and the driven gear receiving intermittent rotary motion therefrom, a gear element brought into mesh with the driven gear before the mutilated gear is disengaged from the latter and remaining so meshed with the driven gear until after the mutilated gear is reengaged therewith. The gear element and mutilated driving gear derive movement from a common power input. Mechanism is provided whereby the gear element and through it the driven gear is brought to rest after the mutilated gear has disengaged from the driven gear and is set in motion, there-

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Manufacturers and Distributors of Burgess Chrome and Tone-Tex Mats

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by to rotate the driven gear, before the latter is re-engaged by the mutilated gear. Thus this re-engagement takes place with the driven gear already in motion. "Clashing" of the teeth in re-engaging is thus reduced and operation at high speeds is permitted without excessive wear of the leading and trailing teeth of the mutilated gear. Invented by Kenneth Warner Jones, Enfield, England. Assigned to K. Warner-Jones & Co., Ltd., London, England. Application August 3, 1944; in Great Britain August 16, 1943. 3 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D.C.

One-Time Carbon in Roll Form

FRYE MFG. CO. announce introduction of a product for producers of continuous or fanfold type of carbon-interleaved forms. Completion of high-speed equipment installed by the company now enables producers of these forms to obtain one-time carbon in roll form completely processed for immediate use.

This is said to be the first time processed carbon has been available to the industry. Heretofore, the continuous form manufacturer has had to process roll carbon on his own printing presses. The new product features marginal punching, cross and lengthwise perforation, tab cutting, file hole punching, and other special features required on continuous type forms.

Thompson Equipment for Printing Plants

THOMPSON CABINET CO. has issued a new catalog No. 47. It is entitled Thompson Equipment for Printing Plants. In it are illustrated the kinds of equipment manufactured for composing room, pressroom, bindery and schools. Book contains 180 pages, many illustrations in color; size, 8¾ in. by 11¼ in. Bound in semi-flexible maroon Fabrikoid, black embossed gold stamped panels on front cover.

Krypton Gas Adapted to Fluorescent Lighting

DURO TEST CORP. announces that its engineers have developed a 25 w. fluorescent lamp which is 50% more efficient in light output than standard 20 w. fluorescent light sources. This is stated to be accomplished by the use of Krypton an atmospheric gas. Company states this is believed to be the first time Krypton gas has been applied successfully on a commercial scale to fluorescent lighting although it has been known to laboratory scientists for some years. The new Duro Test lamp is claimed to provide 1400 lumens of light output.

At first, the new lamp will be manufactured in 25 w., 1½ in. diam., 33 in. length tube. Production will begin in the standard white color. Other colors will be added as production mounts.

The Duro Test Krypton-filled lamps and fluorescent luminaires are stated to be well adapted to the printing and color engraving industries. In quality color control in color reproduction, lamps of the same spectral characteristics can be used and these characteristics are obtainable from Krypton-filled lamps. Fifty footcandles are recommended for color inspection. These levels are obtainable with the proper choice of these new light sources.

In the case of Monotype and line-composing machines, the keyboards usually are equipped with local lighting. Such equipment should include the two-lamp circuit to minimize stroboscopic effect or flicker. This is accomplished by throwing the lamps out of phase by the use of a condenser which is incorporated in the ballast.

In the case of the pressroom, pressmen need low brightness light source recommended for the composing (makeup) table and for the type case. Fluorescent luminaires with Krypton-filled lamps are applicable.

Duro Test announces that the Krypton-filled lamps will be available in all colors and in various lengths and sizes Lamps are claimed to have long life, are easy starting and in some cases expensive ballast is eliminated.

Further information may be obtained from Duro Test Corp. through *Printing Equipment Engineer*.

MECHANICAL FINGERS GRIP PLATES

. . . in NEW rugged ROTASHAVER

Faster shaving with more *Precision!*

Automatic vacuum chip disposal attachment available as optional equipment.

In this remarkable new ROTASHAVER, adjustable hold-down fingers with individual spring tension firmly grip plates and base material while being shaved. This entirely eliminates any plate vibration or tipping of small plates.

You get uniformly precise shaving no matter what the plate size.

Other Remarkable Features:

- ***Solid one-piece cutter head*** adjusts to desired cut depth.
- ***Rigid cast iron web table*** moves only back and forth.
- ***Movable cornice*** raises and lowers with cutter head . . . holds work firmly, just .060" below shaving level.
- ***Built-in precision micrometer.***

Write Today for bulletin on the New MONOMELT ROTASHAVER.

THE MONOMELT CO., Inc.

1611 POLK STREET N. E. MINNEAPOLIS 13, MINNESOTA

Printing Education Week To Be Observed By NGAE

The 21st Annual Printing Education Week will be observed by the National Graphic Arts Education Association (January 16 to 22 inclusive). As in former years the observance will center around the life and work of Benjamin Franklin. A special set of six blotters—The Franklin Pictorial Series—has been designed and printed at the Timken Vocational High School, Canton, O., where Chester A. Lyle is head of the Printing Department. This event is the school version of Printing Week, observed during the same period by the International Association of Printing House Craftsmen, Printing Industry of America, Inc., and other organizations.

Engravers Expand

(Continued from Page 34)

advantage of combination shop operations. A recent survey conducted by the *Inland Printer* indicated that one out of four printers definitely plans to install offset departments, and that an additional 12% were seriously considering this move. A similar survey by the *American Printer* showed that 22½% of the letterpress shops contacted plan to install offset equipment in the near future, and that an additional 23½% were giving much thought to combination shop operations. This trend on the part of plant owners is indicative of the growing belief that the two processes, offset-lithography and letterpress, are teammates rather than competitors. Since combination shops are becoming more prevalent, it seems that the logical setup in the Graphic Arts would be trade services that could supply plates for either process.

There has been considerable prejudice within the industry concerning the relative merits of the various processes. The advertising and publishing industries are not influenced by nor concerned with the claims and counter-claims of rivals within the Graphic Arts. They are concerned only with supplying their clients with the highest quality and most effective jobs attainable. One of the largest printing establishments in the world tells its customers:—"As you doubtless know, we print by practically all the commercially important printing methods. Since this is so, we have no ax to grind for one method over another. For any particular job one of these methods will almost surely offer you better results than any of the others. That is the one we will recommend."

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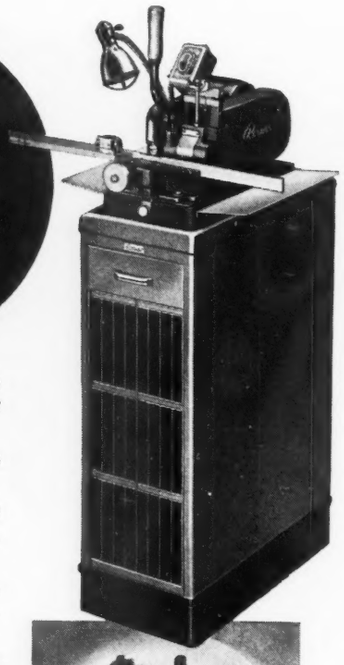

From the smallest job shop up to the largest plant, only Rouse makes a Power Miterer for every type of use.

The full range of Rouse Power Miterers consist of:

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MITERING MACHINES
COMPOSING STICKS
SLUG CLIPPERS
BAND SAWS
LEAD and RULE CUTTERS
TYPE GAUGES

APEA Exhibits

(Continued from Page 40)

Bridgeport Engravers' Supply Co.

E. W. Schwerin, Vice President and General Manager, of the Bridgeport Engravers' Supply Co. was showing the Campbell Temperature Controlled Etching Sink for etching of color plates and still etching of copper plates in ferric chloride solutions. Mr. Schwerin pointed out that this sink provides control of temperature within 2 deg. F from 60 deg. F to 120 deg. F.

Bourges, Inc.

Alfred Bourges and daughter, Jean Bourges Manfield, discussed and demonstrated various types of prepared material in the form of transparent base sheets, the face of which is removed according to pattern to obtain proper separation copy for making color plates. The sheets can be employed for color work in all three major printing processes.

Chemco Photoproducts Co., Inc.

A huge photograph of Chemco cameras used by the New York *Times* formed a striking background for the exhibit of the Chemco Photoproducts Co., Inc., headed by S. B. Anson, jr., Sales Manager. A Chemco Model F Camera having a vacuum back and two disappearing screen mechanisms, and taking a 20 in. by 24 in. negative was sold during the Convention to the Taratum, (Pa.) *Valley*

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You'll never know just how good a rubber roll can be until you try BOOTH'S BLACK RUBBER ROLLS . . . smooth, sweet-running, highly responsive . . . with maximum cam gripping qualities, resistance to glaze, and even diameter when installed properly. All these advantages are yours.

PRICES: $1.45 per pair.
$7.75 per dozen

E. A. Booth Rubber Co.

MAHONING BANK BUILDING
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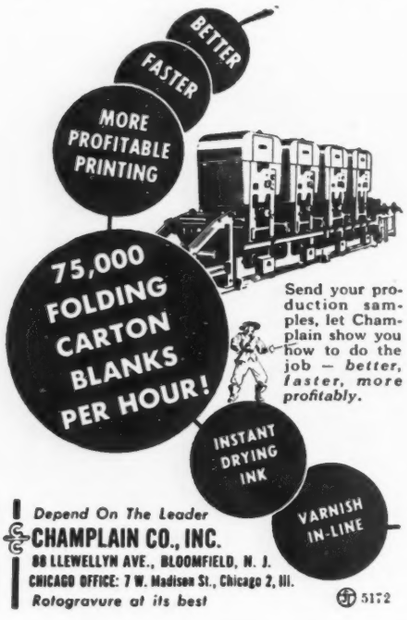
Daily News. A whirler, which is undergoing its experimental stages, attracted much interest when phogoengraving executives found that the plate would coat face up and by a special mechanism, reverse position and dry while face down. An impressive looking Temperature Controlled Darkroom Sink appeared in the display which Mr. Anson said maintains water at any temperature setting between 50 deg. F and 90 deg. F. The Chemco Cold Grid Printer completed the display and here again, strong interest was shown.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John Royle and Sons

Dudley Jessop, Director of Sales for John Royle and Sons, showed the Royle Ball Bearing Router and the Royle Beveler to the many visitors stopping at that exhibit. Information on hand concerning the router included the fact that it will take plates up to 39 in. wide and of unlimited length. The ball bearing router head is capable of continuous running at 23 thousand r.p.m. The Royle Beveler on display was of the straight line type which combines the operations of lining and beveling at one setting of the plate, to assure parallelism. Mr. Jessop stated these machines could be obtained to take up to a 24 in. or 27 in. plate.

Edes Mfg. Co.

Edes Mfg. Co.'s display consisted of the various metals used by photoengravers and was in charge of James O'Connell of Sales and Service for that company. The spotlight at this display centered on Edes Triplemetal which is adapted for fine screen halftones ordinarily used on zinc. Mr. O'Connell explained it would hold fine detail up to a 150 line screen and that it would etch as fast as zinc. The Edes display also had samples of photoengravers' copper and zinc for visitors to see along with a magnesium engravers' plate.

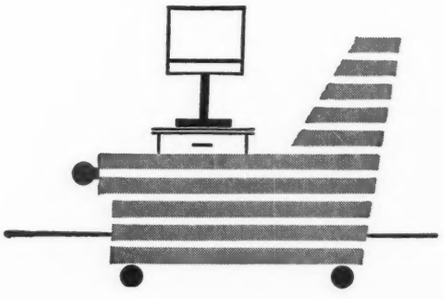
Wines Retires

THE American Newspaper Publishers Association announces with regret the retirement of Walter E. Wines as Manager of its Mechanical Department on November 1, 1948. Mr. Wines has been associated with the ANPA as manager of the Mechanical Department since the inauguration of the department in 1926. During that time he has won the admiration and respect of the membership for his wide knowledge and experience and his loyalty and faithfulness to the best interests of his work. The best wishes of all the newspapers go to Mr. Wines in his retirement.

On November 1, Vernon R. Spitaleri, assistant to Mr. Wines, became Acting Manager of the department.

Macbeth Arc Lamp Co.

Three newly developed products of the Macbeth Arc Lamp Co. were being



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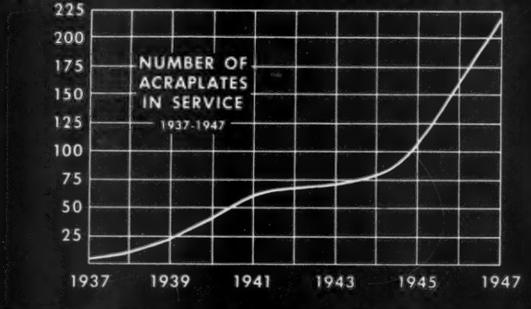

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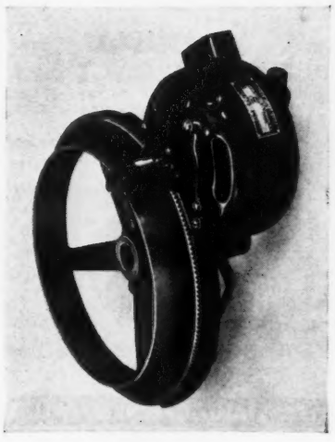

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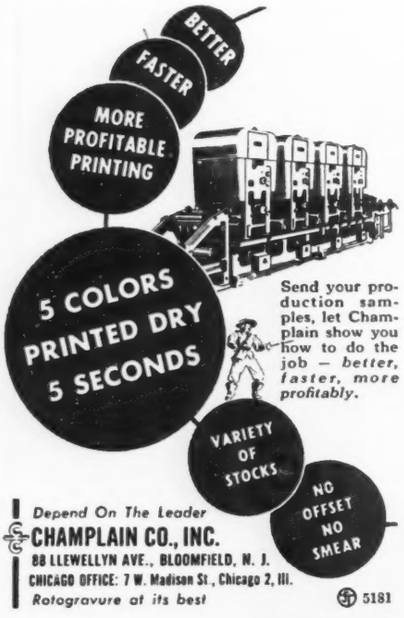
explained during the course of the exhibit by Iredell Eachus, President. First of these was Macbeth's Electronic Constantarc for constant intensity and color, and containing an exhaust unit to dispose of the heat given off. Another new item accompanying the Constantarc was a Darkroom Monitor which indicates when the service switch is open or closed, operates the lamps, contains a focusing switch and an Arconicator to keep the operator informed that the arcs are burning. This may be kept in the darkroom. The third item was a Chromocritic, the purpose of which is to produce a variable color and level of illumination in a color transparency illuminator.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Moore Laboratories

Frank A. Grady, owner of the Moore Laboratories, displayed and explained the International Standard Halftone Screens and the Duplex Screen of the Duplex Screen Corp. The international screen said Mr, Grady, necessitates shooting one shot of a dropout or highlight halftone negative from unprepared copy or combination line halftones in one exposure through the screen. Formerly manufactured only in Europe, the grain is available in two degrees of fineness comparable to 100-line and 120-line screens.

Craftint Mfg. Co.

N. R. Combs, Sales Production Manager, for the Craftint Mfg. Co. was showing the Craftint Multicolor Process to interested visitors at a colorful display. A demonstration board made it possible to see how this process works and the results achieved. The manufacturer states this four-color line process provides the lithographer and engraver with color plates while eliminating benday tinting and all gray and camera color separation.

Harold M. Pitman Co.

R. V. Carlson, Sales Representative, was found at the Harold M. Pitman Co. exhibit showing the executives a variety of items manufactured by that company. Of most interest was a Whirler containing a rubber induction heating blanket which heats from above and below. The display also included a Kinzler Stripping Table and a light integrating device used on cameras called the Luxatron.

Irwin Mfg. Co.

The Irwin Mfg. Co. booth had H. G. Irwin, jr., General Manager, and R. G. Weber, Sales Manager, talking to interested parties concerning blocking lumber which the company manufactures.

Philip Lochman & Co.

Philip Lochman, owner of Philip Lochman & Co. had much information about the products his company manufactures for the photoengraver. Principal among these was their Freundorfer Cold Top Enamel. Other products include Freundorfer Collodion Emulsion, red, blue and black Sensitizers, Rubber Solution, Staging Ink, and Cold Top Developer.

Graphic Arts Appliance Corp.

An adjustable Stripping Table was the feature of the Graphic Arts Appliance Corp.'s display in charge of Carl Harris,

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SAFETY CHASES · ROUTERS · NUMBERING MACHINES · PAPER DRILLS

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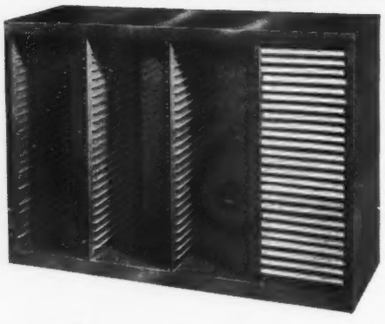

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12x18 - $49.50	6¼x23½ - $74.00	3½x23½-$118.00
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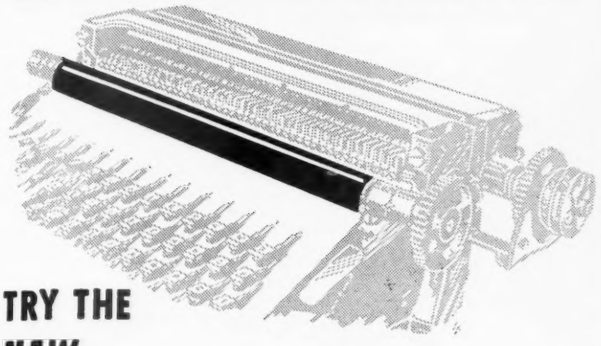

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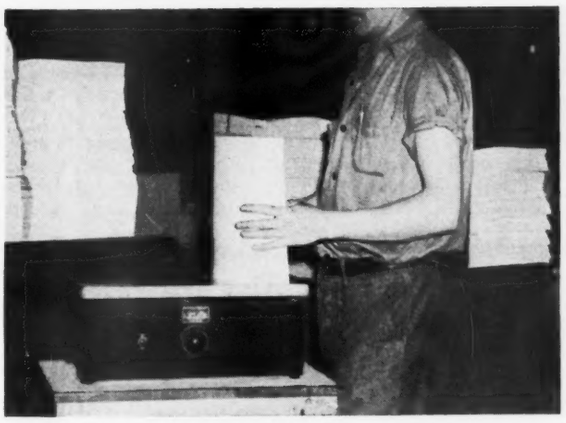

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General Manager. This is equipped with a blue plate glass to relieve eye strain. A hand wheel enables the light box to be changed to any height to suit the operator and an electric motor controls the tilt to any desired position. Also shown was a Plate Cleaning Machine designed to take the health hazard out of cleaning plates. It is electrically heated with thermostatic control.

G. C. Dom Supply Co.

The G. C. Dom Supply Co. was represented by two brothers, A. and W. Lamson, President and Vice President, respectively. Several items of the many handled by Dom were shown. Company supplies chemicals, metals, equipment, and supplies.

Ansco Company

Attracting much interest from the delegates and visitors was the display of color photographs taken in Ansco color at the Ansco Company exhibit in charge of Charles Austin, Graphic Arts Materials and Special Products Manager. Information was available concerning Ansco Reprodol Developer for making line and halftone negatives or contact positives for dot-etching. This can also be used for development of fine line negatives when processed without agitation. Mr. Austin was also showing a color Densitometer and the Ansco line of color materials.

National Steel & Copper Plate Co.

The Natsco All Plastic Etcher and the Sussin Precision Darkroom Camera were exhibited by National Steel & Copper Plate Co. In attendance at the exhibit were: Jack Pass, President; A. R. Bessman, Vice Pres., and L. Steinmiller, Sales Representative. The Sussin Camera is provided with three-point suspension.

Wells Mfg. Co.

Showing what can be done with wood mounting base to make it "behave," Wells Mfg. Co. exhibited plain mounting wood and two recent developments in treating wood to make it dimensionally stable under use conditions. One type of wood base is covered with a thermoplastic cement coating especially for heat-mounting purposes without the use of nails. The other base is covered with a sealed within the wood covered by the coating. W. F. Foley, secretary, and W. S. Shields, manager and treasurer, explained company's products to visitors.

Lauck Mfg. Co.

Paul C. Lauck was present at the Photoengravers' Convention and demonstrated the Lauck Method and Equipment for heat-mounting photoengravings on wood block.

Philip A. Hunt

Philip A. Hunt Co. maintained a booth where friends and customers came to visit. President Hunt, Secretary F. O. Casseboom and Sales Representative J. E. Cline welcomed photoengraving executives. Display showed containers for Premium Graph-O-Lith Developer, Acid Hardener and Hunt's Dragon's Blood (the latter again available).

Clingman Precision Metals Co., Inc.

While Uni-Base (magnesium mounting base for photoengraving) appeared in a number of exhibits at the photoengravers' Convention, W. F. Clingman circulated freely among the exhibits answering questions about Uni-Base. Uni-Base can be used for mounting engravings and electrotypes by heat, with the Lauck equipment, a special

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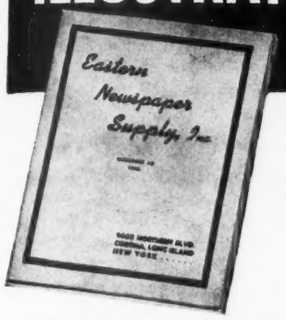

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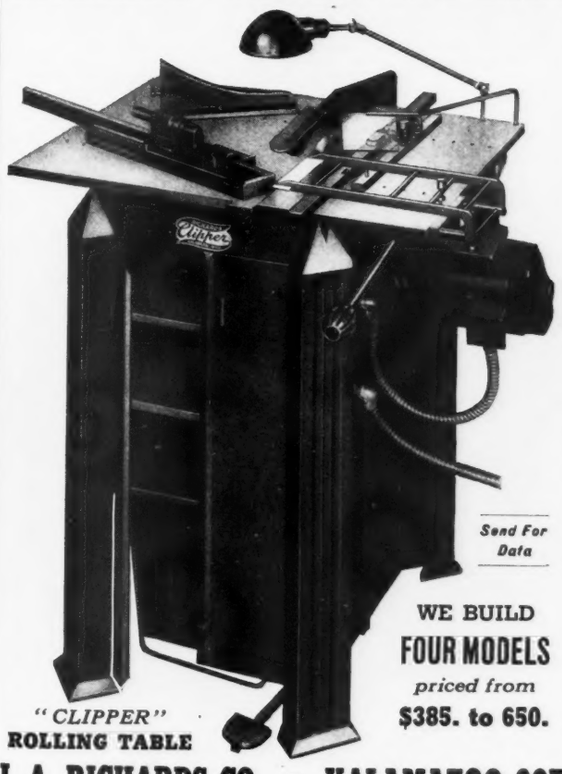

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"Any case is just like any other case"

Since BEVERIDGE Dry Mats have precision quality, you can bank on it that every case of BEVERIDGE Dry Mats will be uniform with other cases. That's the way BEVERIDGE Mats are made. That's why there are hundreds of satisfied users. Why not join them?

New Products Division
The Beveridge Paper Company
Indianapolis 4, Indiana

thermoplastic cement being provided for that purpose.

H. Schmidt & Co.

J. Schmidt, President of H. Schmidt & Co., exhibited several pieces of equipment as follows: A Temperature Controlled Developing Sink, Plate Cooler, Powdering Cabinet and a Kodachrome Viewer. Equipment items are manufactured under the name: "The Champion Line."

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FASTER
MORE PROFITABLE PRINTING
18,000 MULTICOLOR SHEETS PER HOUR!
Send your production samples, let Champlain show you how to do the job — better, faster, more profitably.
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U. S. Stoneware Co.

Vice President Howard Farkas and associates were busy during convention days explaining a number of equipment items sponsored by U. S. Stoneware Co. These were: Turbinaire Etching Machine, Cyclospray (face-down, vertical spray) Copper Etcher, and Tornafic Stainless Steel Zinc Etching Machine. Attending to the wants of visiting photoengraving executives besides Mr. Farkas were: James M. Chamberlain, President; Hubert Royer, Sales Manager, and Stanley Craig, Asst. Sales Manager, Ceramic Div.

Le Page's, Inc.

An old name in industry was represented at the Photoengravers' Convention. Le Page's Photoengraving Glue and Le Page's Glue Top. W. A. King, manager, Photoengraving Div. and Sales Manager Jack Moore were in attendance.

General Plate Makers Supply Co.

Al Kreck, President, greeted visitors amiably. Assisting him were Bob Wilson, Ernie Boveman, John Topecer and Mrs. Kreck. Company exhibited many things. Principal item was one of the Challenge Proof Presses fitted with magnesium Uni-Base in the bed of the press. Indispensable items for the photoengraver consisted of a pair of bronze Photoengravers Plate Pliers, a Depthometer reading in one-tenth of one thousandth inch, Warfel Screen-Plate Leveling Needle Blocks, and the Warfel Nailing Machine fixture by means of which a plate can be mounted squarely upon wood base without much effort.

Phillips & Jacobs

Two men, Sales Manager J. Winterberg and Sales Representative T. M. Witman, demonstrated company's Infrared Type Negative Dryer for films and/or paper. Firm handles photoengraving chemicals and supplies.

R. R. Robertson Co.

R. R. Robertson, with D. D. Robertson and Joe Van Cata in attendance exhibited and demonstrated Robertson's All Metal Darkroom Precision Camera and an Etching Machine. Camera is made in a number of sizes ranging from 24 in. to 44 in.

Atlantic Zinc Works

Carnations pinned upon coat lapels by delectable young woman was cause of many a pause at the booth of the Atlantic Zinc Works. Company exhibited Zomo and A-Z Alloy Zinc Plates and Zomag (magnesium alloy). A well prepared treatise upon the manufacture and manipulation of magnesium plates was distributed. In and out of the booth were W. Roy Manny, chairman of the board;

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We offer the full **Wesel** line, including the new **Wesel Radial Arm Router**

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Speedy operation and accurate results are assured when you use the Nolan "Chief" Saw-Trimmer. It saves time and money . . . steps up production and increases profits. Investigate the time-saving, money-saving Nolan "Chief" Saw-Trimmer today. Write now.

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Mag. broach set	6.00
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Bet Ear Mat Gauge	3.00
C-230 pinion	7.00
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Two-motor full automatic newspaper press drives and control panels, 220 volt, 3 phase, 60 cycle AC, complete with resistors and push button stations:
2 Cutler Hammer 40/3 HP faceplate type, equipped to parallel.
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All used, serviceable, being replaced with larger drives. Immediately available.

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Mechanical Superintendent for large midwestern daily. Should know fully the operation of all mechanical departments. Man should be hard worker, should like this type of work, and should not be over fifty years of age. Paper seeking person for this position is without mechanical superintendent at present time. Please reply Box Number 315. *Printing Equipment Engineer.*

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Leading printing machinery manufacturers offers excellent opportunity for man in select territory. Salary and commission arrangement. Printing background helpful but not essential. Write details and include photo in first letter. Reply Box 312, *Printing Equipment Engineer.*

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4 Miller Master Speed Jobbers, sheet size 11 x 17, ... $ 750.00 each
1 Kluge 10 x 15 Press 1200.00
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Guaranteed in first class condition
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Two General Electric Printing Press Drives
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65c per tube-$5.50 per doz. $5.00 per doz. in two doz. lots, $4.50 per doz. in gross lots.
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Fred Dirkes, president; John Rees and Frank Bonner, sales representatives.

Vandercook & Sons, Inc.

In a long, narrow booth, furnished with restful spectator chairs, Vandercook & Sons exhibited a color movie which explained operation of the Vandercook Four-Color Photoengravers Proving Press. Film was in practically continuous operation. Among the Vandercook personnel present were E. O. Vandercook, President; Fred Duensing, Sales Manager; Otto Sandvik, Factory Sales; Ray Bogden, Superintendent; Roy Sandvil, New York Manager and Gus Zeese, New York Sales. A Hacker Gauge appeared also in the display for inspection by those interested in its usefulness.

Master Etching Machine Co. Engravers' Equipment Co.

Master Etching Machine Co. and the Engravers' Equipment Co. exhibited jointly two products. The first was an Etching Machine display. The other part of the exhibit was devoted to a demonstration of the Master Conveyor Burning-in Machine. Partners O. T. Plesser and W. Guenst met visitors and discussed their joint equipment items.

The Strong Electric Corp.

Rather startling and intense illumination occurred suddenly and intermittently during demonstration hours in the booth of the Strong Electric Corp. The cause was the Strong Grafarc High Intensity Arc Lamp for use with camera, printing frame or composing machine. Feature of the enclosed lamp is a variable speed precision carbon feed motor which maintains constant arc gap length. In attendance at the booth were: C. M. LaPlante, Design Engineer; H. E. Brown, Plant Manager; Arthur Hatch, Development Engineer; Carl Starck and Morris Brillhard, Engineer; Al Meyer and James Willard, Sales Representatives.

Buckbee Mears Co.

At the Buckbee Mears Co. display, Arnold Wicklund, Head of the Specialties Dept., was showing halftone screens and tints. Four 85 line B-M screens could be viewed at the correct angles. They differ from conventional ruled screens in that the crossline ruling is etched on a single sheet of specially selected plate glass, the etched lines being rendered opaque by filling with a deposit of ferric oxide. The manufacturer claims faster exposures are permitted by use of these screens and that tints may be made by direct contact. Each angled screen for color work is bound in a colored plastic corresponding to the particular screen angle.

Electronic Mechanical Products Co.

The Electronic Mechanical Products Co. display was headed by Morris R. Ost, President, and featured that company's Luxometer for measuring an exposure, and the Empco Proportioning Rule for scaling copy. The light integrating instrument has provisions for long or short exposures of any duration, and will automatically close the shutter and turn off the lights should the power fail. It will operate a lamp contactor of any size, current, and voltage. The Empco proportioning rule is discussed in *Printing Equipment Engineer* for Oct., 1948.

Wesel Mfg. Co.

D. C. Green, Chief Engineer, and F. W. Moser, Sales Manager, of the Wesel Mfg. Co. were exhibiting a Beveler with a hydraulic fed table and a Carboloy tipped cutter. Features of the Beveler permit the speed to be changed during the operation and a swift adjustment to the plate. Messrs. Green and Moser were also showing a Radial Arm Router having a 23 in. working bed to handle large size plates.

E. T. Sullebarger Co.

Handling the Champion Line of H. Schmidt and Co. was E. T. Sullebarger, owner of E. T. Sullebarger Co. The feature of this display was a Temperature-Controlled Developing Sink made of stainless steel and having a rear trough for emptying trays. Jeweled lights at the front indicate the cycle of operation of cooling, and heat in trays and refrigerated compartment. A Kodachrome Viewer and a Powdering Cabinet. Powder dust is prevented from escaping into the room by an exhaust unit.

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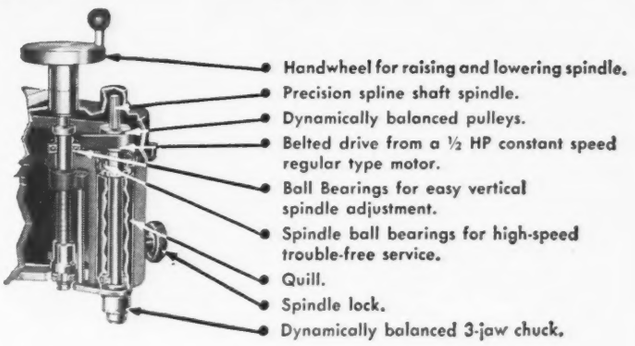
HAMMOND *Radial Router*

1 **A BALL BEARING SPINDLE WITH BELTED DRIVE FROM A ½ HP REGULAR TYPE, CONSTANT SPEED MOTOR.** The ball bearing spindle runs at 12,000 RPM. The pulleys and other parts are dynamically balanced for smooth, vibration free operation.


Handwheel for raising and lowering spindle.
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Ball Bearings for easy vertical spindle adjustment.
Spindle ball bearings for high-speed trouble-free service.
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Dynamically balanced 3-jaw chuck.

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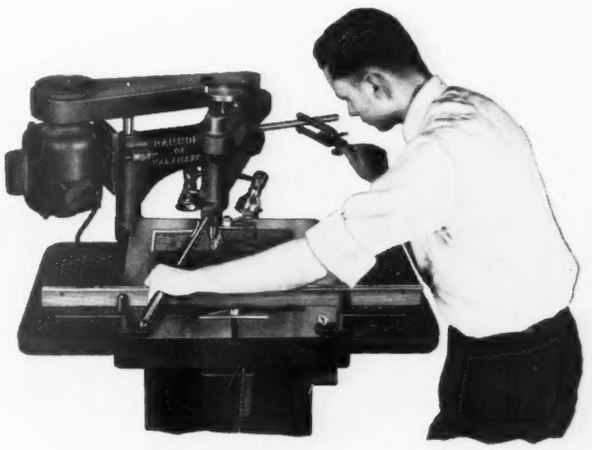

3 **A GOOD** *Radial Router* **AT MEDIUM PRICE.** The Hammond Radial Router is fully powered, ruggedly and sensitively built and has full-page capacity, providing a good Radial Router at Medium Price. **Write for complete information — there's no obligation.**

MODEL R-4

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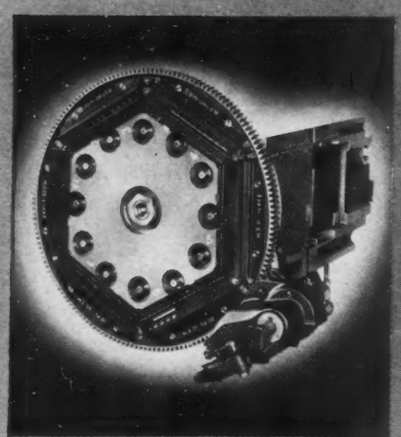
Here are but a few of Intertype "firsts" . . . all important contributions for improving composing room operation.



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Virtually eliminates the need for changing mold liners and ejector blades. Will cast slugs 5 to 48 point in size, up to 30 picas wide. All molds will cast overhanging slugs.

FULLY AUTOMATIC AUTOSPACER

Automatically composes white space . . . quads and justifies lines at one setting of the control knob . . . eliminates many manual motions when quadding or centering.

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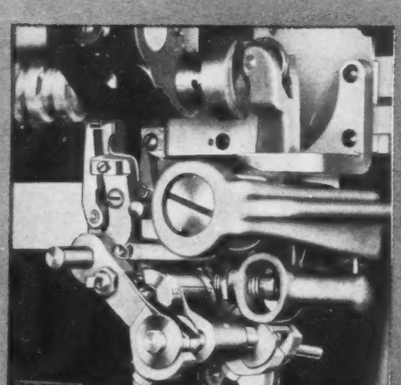
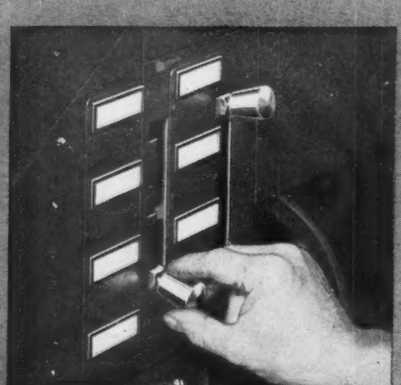
Transparent—you can count the matrices *in* the magazine . . . see for yourself that they circulate freely.

Lighter—a full length Visilite is 35 lb lighter than full length brass . . . 11 lb lighter than full length aluminum.



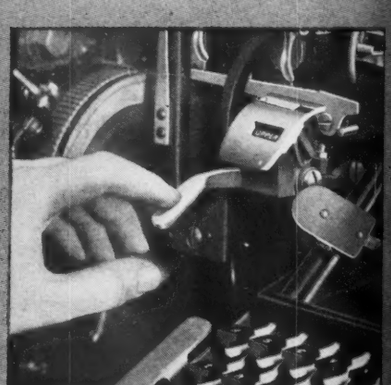
CONTINUOUS DISTRIBUTION

No waiting for matrices to find their way home when mixing from as many as four magazines at a time.



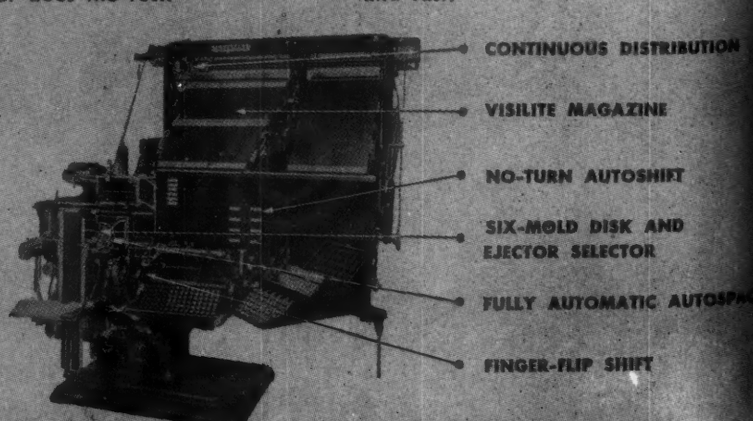
NO-TURN AUTOSHIFT

No crank to turn . . . simply set the lever for the magazine you want—the motor does the rest.



FINGER-FLIP SHIFT

Makes mixing type from two main and two side magazines simple . . . and fast.



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